# *Final Report*

**of the**
**Evaluation Team**
**of the**
**South Dakota Alliance for Distance Education:**
**South Dakota's Star Schools Project**


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# EXECUTIVE SUMMARY

## Background

Several years ago, the state of South Dakota began an intensive effort to use distance education to provide new and expanded educational opportunities to the schools of the state. Specifically, the governor spearheaded the development of a comprehensive project with three components. First, schools were wired and connected for high speed Internet and videoconferencing. A network called the Digital Dakota Network was built. Second, schools were equipped with computer and compressed video hardware. This was called the Connecting the Schools project. Third, teachers were trained and supported to use distance education technologies to enhance the educational experiences of students. Teacher support was in the form of special staff development academies and financial incentives. Finally, the Department of Education and Cultural Affairs obtained a grant from the U.S. Department of Education's Star School Program. The grant, titled the South Dakota Alliance for Distance Education, provided funds for a massive evaluation and research effort in South Dakota that is summarized in this paper.

## Purpose of the SDADE Research and Evaluation Activities

Educational leaders in South Dakota were interested in investigating the impact of various efforts on the adoption of distance education by the teachers of South Dakota. Specifically, a two-pronged activity was begun. First, research studies were conducted to investigate the adoption of distance education by teachers and schools. Second, an evaluation study was implemented to determine if the SDADE project being completed appropriately. The primary purpose of the research and evaluation studies was to determine if the teachers and schools in South Dakota were adopting distance education. A second purpose was to evaluate the impact of the activities of the South Dakota Alliance for Distance Education.

## Theoretical Framework

Rogers' (1995) diffusion of innovation theory was used to guide research activities. Rogers' theory was used to determine if the use of change agents, opinion leaders, and support activities had a direct impact on adoption of distance education. Sorensen's (1996) AEIOU approach was used as the framework for evaluation activities. The AEIOU approach investigated the accountability, effectiveness, impact, organizational context, and unanticipated consequences of the SDADE activities.

## Methodology

Research and evaluation activities were conducted concurrently over a three-year period. First, teachers were randomly selected and mailed a survey that determined the relative rate of adoption of distance education. This survey was sent at the beginning, and again at the end of the project. Second, 31 schools were selected for site visits which were held in the spring of 2002. During the site visits, students, teachers and administrators were interviewed. Also during site visits, Digital Dakota Network and technology intensive facilities were visited. In most cases,

pictures were taken, for the record. Third, 11 superintendents from site visit schools were interviewed by telephone. The superintendents were asked questions about the adoption of distance education in their schools

Finally and most important, for two years a team of seven evaluators shadowed those involved with the SDADE project. The observations of this group of seasoned evaluators were combined with quantitative information to produce this final report. The evaluation team's mission was to determine if the SDADE project partners were accountable and effective, and efforts were made to determine what impact the SDADE project activities had on the adoption of distance education in the schools of South Dakota. In order to enrich the level of understanding of the events occurring in the State, unanticipated outcomes were noted and the organizational context in which the SDADE project existed was evaluated.

## Results

Generally, results were in two areas. First, the evaluation study indicated that the efforts of the Department of Education were largely successful. The Department's change agents were found to be effective. Second, the research study results demonstrated that distance education has not reached the point of *critical mass* in South Dakota. *Critical mass* is the rate of adoption required in order for the innovation to continue without the need for efforts of change agents (Rogers, 1995). Distance education expanded during the three years of the project, but is still perceived by the majority as an important but not essential component of the average teacher's and school's efforts.

Reasons for the slow rate of adoption included: lack of knowledge about the capabilities of the DDN and distance education, fear of using the technologies, limited time to try out the system, and inconsistent leadership at the local level.

## Conclusions

The results of the evaluation of the South Dakota Alliance for Distance Education indicated that the efforts of those involved have been largely successful in scope but not scale. Change agent efforts need to continue and expand. Distance Education in South Dakota has been facilitated because of the SDADE—more teachers were trained, more educational opportunities were being offered, and it seems the educational systems of the state were improved. Second, the results of the research activities provide direction for continued and additional activities needed to increase the rate of adoption of distance education in South Dakota. In other words, continued efforts by the Department of Education are necessary to facilitate the diffusion and adoption of distance education generally and the Digital Dakota Network specifically. Past efforts have been successful. Additional efforts are needed.

# PART I - INTRODUCTION AND BACKGROUND

## Introduction

South Dakota is one of the most rural states in the Union. It boasts a population of just 754,000 residents distributed across a territory measuring approximately 400 miles by 250 miles. Many of the connecting roads are single lane rural highways, and travel time between the major communities is lengthy.

There is also a growing shortage of teachers in South Dakota, which holds the unenviable record of offering the lowest teacher salaries in any U.S. state (*Argus Leader*, February 18th 2002). Teachers are steadily leaving South Dakota and authorities are discovering that the outward flow of human resources is hard to stem and even harder to replace. Lack of specialized teachers is resulting in a reduction in curriculum offerings across all levels of education.

In 1996, South Dakota's Governor, the Hon. William J. Janklow made a commitment to education in South Dakota that was unprecedented. First, he directed that each school building in the state be wired for interactive telecommunications for distance education. He called this the Wiring the Schools Project (WTS). WTS was completed two years later. Simultaneously, he directed that teachers be trained to effectively use technology in teaching and learning. This project was concentrated in a series of comprehensive training events called Technology for Teaching and Learning Academies (TTLs).

Next, schools were connected to the state's new network, the Digital Dakota Network (DDN). This project was called the Connecting the Schools Project (CTS). As part of CTS activities, schools were equipped with state of the art interactive telecommunications equipment for distance education obtained as a gift from the US WEST Foundation. Approximately 200 schools were equipped with equipment and connected to the DDN. Educators were trained to be effective at teaching distant learners at special staff development sessions that complemented the TTLs. They were called Distance Teaching and Learning Academies (DTLs).

The WTS Project, the TTLs, CTS, DDN and DTLs were funded by the state, or from grants from the private sector, notably the US WEST Foundation. Federal funds were not used for the WTS, CTS, or DDN.

During the summer of 2000, a special event was held in Pierre, the capital of South Dakota. This event was called Governor Janklow's Capital City Conclave on Distance Education. The Governor's Conclave brought twelve national and international experts in distance education to South Dakota to interact with local education leaders. These experts, referred to as the *Dakota Dozen*, worked with over 50 education "ambassadors" representing all aspects of education in the state. Their efforts were summarized in the Conclave Proceedings Video that contains a vision for the future of education in South Dakota. The vision was to infuse technology throughout the state and to provide free, open, and equal access to technologies for learning, first to children, then to the community, and finally to improve the standard of living for all South Dakotans.

The theme of the Governor's Conclave, *Start with the children…empower the workforce…promote economic development. . .* , was the rallying point during the Conclave for ideas to improve education in South Dakota using distance education. This ten-word theme continues today to be a clarion call for education in the State.

## Distance Education: South Dakota's Approach

Distance education has been defined and a number of theories about it have been offered (Simonson, 2000). South Dakotans studied this literature and redefined the innovation of distance education. South Dakota's definition is based on a belief about the practice of distance education that may become a model for the future application of this technology in the United States. Distance education is defined in South Dakota as:

> *"…formal, institutionally-based educational activities where the teacher and learner are normally separated from each other, and where two-way, interactive telecommunications systems are used to connect them for the synchronous and asynchronous sharing of video, data, and voice instruction."*

This definition is based on several principles:

- local control of the distance education curriculum by school boards, school administrators, and teachers,
- partnerships of educators who plan together, share resources, and cooperate to meet needs,
- implementation of distance education using existing educational institutions,
- instruction planned and coordinated by classroom teachers who are supported by other professionals,
- use of a tier approach to the delivery of educational experiences that involves regional partnerships and statewide alliances so that hundreds of instructional events can occur simultaneously,
- widespread access to a user-friendly and inexpensive network that permits the flexible offering of a variety of distance education experiences, and
- the availability of a large number of trained teachers, knowledgeable administrators, and prepared students.

In South Dakota, this definition and these principles provide the foundation for distance education in the state. The Department of Education (DE) is the organization that has the responsibility for what may be the linchpins for the success of distance education in the state - the availability of a large number of trained teachers, knowledgeable administrators, and prepared students.

Distance education is possible because of the immense capacity of the Digital Dakota Network and the large number of DTL and TTL trained teachers. It is based on several principles:

- effective teaching strategies for local students are also effective teaching strategies for distant students,

- careful and appropriate planning of teaching and learning activities improves learning experiences for both local and distant students,

- instructional strategies should be matched to desired learning outcomes; a variety of strategies should be used for both local and distant learners,

- technologies should be flexible and compatible with a variety of teaching styles and should be expandable so that new approaches can be easily incorporated,

- telecommunications technologies should link teachers with learners, and learners with learners, in as unobtrusive and realistic a manner as possible, and

- distance education is a credible and effective strategy for teaching and learning.

## Educational Telecommunications in South Dakota

South Dakota has long been recognized for its commitment to excellence in education. The state is also nationally known for innovation in education. Perhaps the best example of both excellence and innovation can be seen in the pioneering role the state has played in the emerging field of educational telecommunications. In South Dakota, the use of various telecommunications technologies dates back several decades, long before the benefits of this form of educational delivery were widely recognized. The expertise in educational telecommunications gained by South Dakota educators has also resulted in model teacher training programs.

Over the last few years, the state has begun to more fully utilize the South Dakota Digital Dakota Network (DDN). This interactive video/voice/data network currently provides interactive instruction between each of South Dakota's school districts. Activated in August 2000, the network has been used to provide thousands of hours of instruction. The DDN has also been used for hundreds of educational meetings and staff development programs during its initial years of operation.

Beginning in 1995, South Dakota leaders began innovative initiatives to advance education, the economy, and technology in support of a commitment to opportunities for every person. The initiatives included:

- Wiring the Schools
- Technology for Teaching and Learning (TTL) Academies
- Connecting the Schools
- Development of content standards
- Technical training
- A variety of innovative programs for educational and workforce development.

The *Wiring the Schools* Project, which began in 1996, has successfully wired every public K-12 school building in South Dakota. Every classroom and dormitory room in public and private post-secondary institutions was connected by spring, 2000. South Dakota's network was named the Digital Dakota Network (DDN). The DDN also provides for high speed Internet and local and wide area networking.

In 1997, Governor William J. Janklow, initiated the *Technology for Teaching and Learning* (TTL) Academy, an ambitious professional development experience for teachers in South Dakota to help them master the skills needed to use technology in the classroom. The program involves a 20-day summer immersion institute and a series of follow up activities that span the next 12-month period.

The TTL Academy purpose is to establish a cadre of highly trained educators across the state who:

- Actively change teaching and learning in classrooms through the integration of technology into curriculum.
- Model effective teaching practices using technology.
- Assist fellow educators in learning how to use technology.

The *Connecting the Schools* Project (CTS) was initiated in 1999 as a further effort to put educational technologies to work in the newly wired schools. The CTS has three phases:

Phase I – Network Infrastructure
Connects every school in the state to the Digital Dakota Network (DDN), South Dakota's statewide data and video Intranet.

Phase II - Equipment Seeding
Establishes data networking in schools and places interactive video equipment in middle and high schools throughout the state.

Phase III – Distance Learning Infrastructure
Provides resources and opportunities for educators, students, and the workforce.
Workshops – providing participants with an overview of distance education, teaching techniques, and an understanding of the South Dakota plan for distance education.
Technology for Teaching and Learning Academies (TTL) – expanding from the initial vision of training teachers to also include network administrators and school administrators, providing intensive training for teachers and administrators to increase technology skills and explore issues related to technology planning, acquisition, and integration in curriculum and instruction.
Distance Teaching and Learning Academies (DTL) - providing teachers intensive three-week sessions in the use of video conferencing equipment and instructional design for distance learning. Specifically, the training of teachers provides competence in core technology skills and the ability to use available technologies to enhance the curriculum, instruction, and assessment. Additionally, it has been determined that distance education will be used to provide staff development for teachers, including competence in

classroom management, school district continuous improvement, and techniques of collaborative learning.

In summary, the current and proposed technology initiatives in South Dakota are part of a comprehensive plan to infuse technology throughout the state, and to provide technology skills to students, teachers, administrators, government employees, and the workforce. These efforts provided the foundation for the South Dakota Alliance for Distance Education, South Dakota's Star Schools project.

## The South Dakota Alliance for Distance Education - South Dakota's Star Schools Project

The South Dakota Alliance for Distance Education: South Dakota's Star Schools project (SDADE) originated as a consequence of a funded proposal written during the Spring of 2001 to the United States Department of Education's Star School Program. The proposal was submitted and funded for $3 million. The proposal was written as a collaborative effort of Dr. Tamara Bauck, Director of the Office of Technology of the South Dakota Department of Education and Dr. Michael Simonson, Professor of Instructional Technology and Distance Education at Nova Southeastern University. After funding, Ms. Bauck became the SDADE principal investigator and Dr. Simonson was named the SDADE evaluator. Subsequently, Shannon Amiotte was hired as the SDADE project manager. The SDADE fiscal agent is the Department of Education of the State of South Dakota.

The funded SDADE proposal has six goals, 23 objectives, and 56 activities (Appendix 1). The approach taken by the SDADE was to identify partners who would receive contracts to complete SDADE activities. Requests for proposals were submitted to potential partners who responded with specific proposals that included detailed action plans and budgets. In many cases, proposals were negotiated and revised before contracts were signed. One requirement of contracted partners of the SDADE was that they cooperate with the SDADE evaluation team.

### The SDADE Partners

The South Dakota Alliance on Distance Education partners fall into three categories:

<u>Management</u>

- South Dakota Department of Education (formerly the Department of Education and Cultural Affairs)

<u>South Dakota Partners</u>

- South Dakota Public Broadcasting
- South Dakota Local Education Agencies
- South Dakota Public Universities
- South Dakota Professional Education Organizations

- Technology In Education (TIE)
- Mitchell Technical Institute

External Partners

- United States Distance Learning Association
- Instructional Technology and Distance Education Program at Nova Southeastern University
- Technology Research and Evaluation Systems - Project Evaluation Specialists

**The Evaluation Plan**

The evaluation activities of the South Dakota Alliance for Distance Education rely heavily on both qualitative and quantitative data collection and analysis. Data were collected as the project was conducted.

Evaluation personnel from the Technology Research and Evaluation Systems (TRE-Systems) systematically monitored all aspects of the progress of the project and used both formative and summative strategies. Formative evaluation made it possible for SDADE personnel to adjust aspects of the program as needed and addressed (1) the status of project objectives, and (2) how activities have affected participants. Summative evaluation addressed the overall effectiveness of the project and determined whether objectives have been met.

The evaluation process includes the examination of both quantitative and qualitative data. The partners recognized the need to produce quantifiable data so that the success of a project in meeting its objectives could be empirically assessed. Quantitative data were collected through the use of report forms and survey instruments with necessary revisions made to reflect changes in objectives and activities as the project progressed.

The use of qualitative data proved to be an integral part of the evaluation plan. In addition to the use of open-ended survey questions, the evaluation team used methods involving focus groups, interviews, and observational techniques for data collection. Qualitative study provides a way to collect data in close proximity to a specific situation. It provided a richness that enabled the complexity of the situation to be revealed and to go beyond answering the questions of "what" and "how many." Qualitative research methods were used to collect data about the factors that influenced use, acceptance, and effectiveness of distance education.

Evaluation of this project was conducted at three levels. First, SDADE partners routinely collected evaluation information during and after project activities. Second, TRE-Systems evaluators assembled a portfolio of evaluation data collected from project partners and combined these data with evaluation information collected by TRE-Systems staff evaluators. Third, a team of three national experts visited South Dakota to evaluate the activities of the SDADE in the spring of 2003. This second level evaluation team submitted a report to the lead project evaluator and it is included as Part VI of this report.

## The Evaluation Team

The composition of the evaluation team, including short biographical statements is included in Appendix 8. The structure of the evaluation team is as follows:

Lead Evaluator and Evaluation Coordinator
Michael Simonson, Professor of Instructional Technology and Distance Education at Nova Southeastern University, North Miami Beach, FL, took the role of lead evaluator. Steve Wheeler, Senior Lecturer in Distance Education at the University of Plymouth in England served as evaluation team coordinator to manage the regular activities of the evaluation team.

Evaluation Team
Four evaluation specialists (Mark Hawkes, Ron Senne, Shirley Walrod, and Gloria Steele; Appendix F) conducted in-state evaluation activities. These specialists worked with the lead evaluator and the evaluation team coordinator to gather data, conduct focus groups, complete document inspections, and hold interviews. The four evaluation specialists were divided into a blue team and a green team, each with specific responsibilities for evaluation.

Evaluation Assistants
Two part-time evaluation assistants (Joanne Ustad and Sandy Krage) traveled throughout South Dakota conducting site visits and preparing case studies. These evaluation assistants were graduate students in instructional technology drawn from a university in South Dakota. They worked in conjunction with the blue and green teams throughout the process of evaluation.

Second Tier Evaluators
Three specialists with experience in distance education and evaluation of large projects visited South Dakota during the spring of 2003. They conducted a site visit and submitted a report to the Lead Evaluator and Project Manager. This second level evaluation team was led by Dr. Susan Zvacek, Director of Distance Education, from the University of Kansas. Dr. Zvacek served as an external evaluator for the Iowa Star Schools project and has written and lectured extensively on evaluation and assessment in distance education. Dr. Gary Brown, Director of Technology for the Broward County Florida Schools was a team member. Dr. Brown has considerable experience in the implementation of large-scale distance education programs. The third team member was Dr. Nancy Maushak who is a professor at Texas Tech University. Dr. Maushak has served as lead evaluator for several large projects involving distance education, including the Iowa Distance Education Alliance, Iowa's Star Schools Project.

## The Evaluation Design

This evaluation plan is built around the AEIOU approach (Sorensen, 1996). The effectiveness of this approach has been demonstrated during its use evaluating the activities of the Iowa Distance Education Alliance, Iowa's Star Schools Project, a multi-year statewide distance education activity. Additionally, the model has been used to evaluate a number of other innovative projects such as the Iowa Chemistry Education Alliance, the Iowa General Chemistry Network, and the DaVinci Project: Interactive Multimedia for Art and Chemistry (Simonson, 2000).

The AEIOU approach has two primary purposes as an evaluation strategy. First, the model provides formative information to the staff about the implementation of their project. Second, it provides summative information about the value of the project and its activities.

Component 1: Accountability
*Did the project planners do what they said they were going to do?*

This first step in ascertaining the effectiveness of the project was targeted at determining if the project's objectives and activities were completed. Evaluation questions focused upon the completion of specific activities.

Methods Used: A variety of data on accountability were assembled from project records. Project leaders were asked to provide documentation of the level of completion of each of the projects goals, objectives, and activities. Key personnel were interviewed to yield anecdotal information and other non-standardized data that would inform evaluators about the project.

Component 2: Effectiveness
*How well was the project implemented?*

This component of the evaluation process attempted to place some value on the project's activities. Effectiveness questions focused on participant attitudes and knowledge. Evaluation involved collation of the reactions of participants engaged in staff development activities.

Methods Used: Standardized measures were used to determine program effectiveness. Surveys of teachers were used to ask questions related to perceptions about the project. Focus groups, especially during the site visits, were conducted to provide valuable information and participants were systematically asked to respond to questions about the project.

Component 3: Impact
*Did the project make a difference?*

During this phase of the evaluation, questions focused upon identification of the changes that resulted from the project's activities, and these were tied to the stated outcomes of the project. In other words, if the project had not been implemented, what of importance would not have occurred? A key element of the project evaluation was the collection of longitudinal data. Impact is an extremely difficult effect to measure because determinants of impact are varied. Therefore, data were collected at the beginning of the project, during its implementation, and at the end of the project.

Methods Used: Qualitative measures such as interviews, focus groups, and direct observations were used to identify the project's impact.

Component 4: Organizational Context
*What structures, policies, or events in the organization or environment helped or hindered the project in accomplishing its goals?*

The focus of this component of the evaluation was on identifying those contextual or environmental factors that contributed to, or detracted from, the project's ability to conduct activities.

Methods Used: Organizational context evaluation was based upon interviews with key personnel, focus groups made up of those affected by the program, and discussions with key individuals that identified policies and procedures that influenced the program. Direct participation in program activities by the evaluators enabled the evaluation team to observe events and systematically comment on them.

Component 5: Unanticipated Consequences
*What changes or consequences of importance happened as a result of the project that were not expected?*

This component of the AEIOU approach identified unexpected changes of either a positive or negative nature that occurred as a direct or indirect result of the project. Unanticipated consequences are a rich source of information about why some projects are successful and others are not. Central to the measurement of unanticipated outcomes was the collection of *ex post facto* data.

Methods Used: Interviews, focus groups, case studies, and surveys that asked for narrative information were used to identify interesting and potentially important consequences of the project. Evaluators interacted with project participants on a regular basis to learn about the little successes and failures that less sensitive procedures overlook. Active and continuous involvement by evaluators permitted them to learn about the project activities as they occurred.

**The Research Plan**

Several additional activities were conducted to support the overall evaluation of the SDADE. These activities were more like research than evaluation, but were designed to relate directly to the overall purpose of the SDADE – to determine the status of the adoption of distance education in South Dakota and to identify what events were successful and what activities were needed to continue the adoption of this innovation.

Rogers' Diffusion of Innovation theory (1995) was the guiding force for the research agenda. Rogers' classic work was a guide for activities designed to promote the adoption of distance education, and also served as the theory base for the research activities described next.

First, a number of site visits were conducted to examine firsthand the schools' use of distance education and the Digital Dakota Network. Thirty-one schools were visited by two evaluators for about a day. Administrators were interviewed, students and teachers participated in focus groups, and DDN classrooms were visited and photographed. A short, but detailed report was written about each school and the results of the site visit (Site Visit Report, 2003).

Next, eleven school superintendents from the list of site visit schools were contacted and interviewed about 6 months after the site visits were completed. The purpose of these telephone

interviews was to determine the role that superintendents played in the process of the adoption of distance education in their schools (Calderone, 2003).

Finally, a survey was sent to a random sample of South Dakota teachers. This survey had four sections. Section one asked demographic and background questions. Section two determined a teacher's level of personal innovativeness. Section three was used to determine teacher's perceptions of the innovativeness of the school where they worked, and the final section asked specific questions about distance education and the Digital Dakota Network.

These research activities supported and complemented the SDADE evaluation. In other words, the AEIOU approach was used to provide a framework for the evaluation of each goal, objective, and activity of the SDADE. The research activities were designed to determine the status of the adoption of distance education in South Dakota, and to determine the impact of the SDADE activities on the schools, teachers, and students of the state.

## PART II – SELECTED EVALUATION RESULTS

### Notable Results

This section of the report presents the notable findings of the project evaluation. The evaluation team identified these activities as highly effective and likely to have a significant impact on the adoption of distance education in South Dakota. The matrix found in Appendix C explains in detail the status of each activity.

Notable results for each of the six goals of the project were identified. (Appendix A includes a listing of all goals, objectives, and activities):

> Goal #1: Education using the Digital Dakota Network will be UNDERSTOOD and ACCEPTED by South Dakotans.
> Goal #2: South Dakota educators will be PREPARED and SUPPORTED so they can effectively teach students at a distance.
> Goal #3: South Dakota schools will be CONNECTED to the DDN.
> Goal #4: Instruction will be OFFERED and access to instruction INCREASED using the DDN, especially in needed subjects such as mathematics, sciences, foreign languages, and literacy.
> Goal #5: A program of RESEARCH and EVALUATION will be established to document the impact and effectiveness of the DDN and the distance education efforts underway in South Dakota.
> Goal #6: The Department of Education and Cultural Affairs will MANAGE the South Dakota Star Schools Project.

#### Training Videos

One example of the outstanding work done by SDADE staff in cooperation with external partners was the series of videos produced by South Dakota Public Television. Scripts for the videos were written by faculty from Nova Southeastern University. During the production process it was determined that more involvement by Department of Education technology team would improve the applicability of the tapes by focusing them more on South Dakota issues. Several scripts were rewritten and videos were edited and the resulting products are outstanding.

Of considerable note are the videos dealing with assessment and the overview of the DDN itself. The other four videos in the series (Operation of the Videoconferencing Equipment, Background of the DDN, Instructional Design for Distance Education, and Online Strategies for Distance Education) are very good, also. Certainly, SDADE staff and partners were accountable for the activities related to the planning and production of the videos. Evaluation team members found the final tapes to be very effective, and they certainly have the potential to have a major impact on the adoption and use of distance

education in South Dakota. One unanticipated outcome from this activity was the identification of high quality on-camera talent on the Department of Education technology staff. It is recommended that these videos be duplicated using a variety of formats (e.g. VHS, MPG, MOV) and widely distributed. They are an obvious and effective consequence of the SDADE project.

Workshops

The project required that five faculty development workshops be held for the State's universities to familiarize teacher education faculty with the theory and practice of distance education. These five workshops were led by faculty from Florida's Nova Southeastern University.

The distance education training workshops offered by Nova Southeastern University initially produced mixed reviews as expressed by faculty who attended. A total of five workshops were conducted. Some participants welcomed the training while others strongly rejected the training and criticized it. Comments on both sides related mainly to the content of the workshops, and with the training methods employed. Many attendees requested better information about the DDN and also on practical skills development. The feedback from each workshop was systematically analyzed and used to improve delivery of subsequent sessions. The final three workshops were rated as outstanding by faculty.

Workshops are considered to be a primary way in which knowledge about an innovation is disseminated (Rogers, 1995). In South Dakota, teacher educators were offered workshops with the hope that the new skills they acquired would become evident in their teaching and this would influence students preparing to be teachers. Often, professors are considered both opinion leaders and change agents. In the case of workshops for teacher education faculty, SDADE leaders used professors from the Instructional Technology and Distance Education program at Nova Southeastern University to be both opinion leaders and change agents for South Dakota professors in order to diffuse distance education to the next generation of the state's teachers.

Additional Training

Considerable data were collected that indicated the importance of training of South Dakota teachers. Additional efforts of the SDADE are planned. Rogers (1995) emphasizes the importance of knowledge about an innovation in order for it to be adopted. Teachers reported during focus groups conducted as part of the site visits (Part IV) and on the survey sent to randomly selected teachers (Part III) that there is a continuing need for training in distance education teaching and use of the DDN.

Equipping New Classrooms

The DDN is a dynamic technology application with considerable growth potential. Evaluation team members felt that the connecting of new classrooms to the DDN would

make the network more effective. Dedicated classrooms at teacher education colleges and at sites in the state where instructional resources were located, such as museums, were considered to be ways to improve the likelihood that the DDN would be adopted. The evaluation team felt that this activity was done in an accountable manner, was effective, and had the potential to have significant impact on education in South Dakota.

K-12 Schools Visits

Several key themes emerged from the observations, interviews, and data gathered from site visits to K-12 schools. A visit to one school revealed that continuing professional development would be a major contributory factor to the success of distance education:

*"There are many reasons why an innovation like the DDN should succeed in our school's' progressive environment, but without continued professional development on the system and more opportunities for collaboration, the DDN will struggle to find its niche here."*

Support for teachers from school administrators was another key factor contributing to the adoption of new technologies in the classroom. An interview with staff at one school showed that:

*"…to encourage the use of the DDN in the classroom, administrators offered a ½ day free time to teachers who were venturesome enough to attempt to integrate the DDN into their curriculum. Administrators were more than happy to cover a class for a teacher to use that time in developing new adaptations of the technology for their students."*

Quality and reliability acted as an encouragement for teachers to adopt the new educational technologies. The videoconferencing systems, for example, periodically performed below their potential and due to intermittent technical difficulties some marked failures were reported, as an interview with one school's teaching staff revealed:

*"The frustration of attempting to integrate the system into the student learning experience seems to have reached its peak when the school attempted to hook up to the system to view the WWII Veterans Memorial dedication last fall. Several classes gathered to view the dedication, but with 72 other hook ups to the event the connection was exceptionally unstable and the picture was choppy. Several successive events using the DDN have met with the same results, and the unreliability of the system has teachers reluctant to use it."*

When asked what specific problems they encountered in attempting to use the DDN, teachers reported being bothered by some of the 'small things' that circumvented the use of the system in their classes. For example, few teachers were aware what State activities and resources were available on the system, and this indicated that there was a genuine need for better information dissemination. One excellent activity was the MegaTTL email system that regularly sent notices of events to thousands of South Dakota teachers.

Lack of consistency in planning and barriers created by organizational structures were another issue to address, as the principal of one school discussed:

*"The difficulty of setting up compatible scheduling for course sharing identifies a state-wide problem in that local control allows schools to choose traditional or block scheduling, start times, dinner bells, and school activities. While the principal believes that the future will bring more collaboration and cooperation between school districts, "the state is miles away from accepting uniform schedules," he said. He sees a need to establish a consortium of schools with block scheduling."*

More detailed information about the school site visits can be found in Part IV.

Action Research Projects

At the start of the project a request for research proposals went out to South Dakota's educators for studies to investigate the effects of distance education in schools. Ten proposals were received and nine were recommended for funding. Researchers participated in a one-day orientation session held in Pierre. Faculty from the Instructional Technology and Distance Education program from Nova Southeastern University supervised them during the research process. Ultimately, a 142-page *Encyclopedia of Action Research on Distance Education in South Dakota* was published. This document was widely distributed and is included on the South Dakota Department of Education web site. This monograph is considered an excellent example of teacher centered, action research.

Curriculum and Thematic Web Pages

Probably one of the most important activities funded by the SDADE were the thematic web pages and the exemplary curriculum units. Teachers and teacher teams were funded and instructional materials were produced. While teacher constructed instructional materials are often situation specific and not often usable by other teachers in other locations, every effort was made by SDADE and Department of Education leaders to insure that the curriculum and web resources were effectively constructed and archived for use by others. One notable outcome of these activities was the recognition of teachers and teacher teams as professionals who could design and develop high quality instructional materials for use in a distance education environment.

Publications

Several publications have emerged as a result of the conducted research. Michael Simonson and Tamara Bauck (SDADE evaluator and principal investigator respectively) co-authored a paper for the convention of the Association for Educational Communications and Technology that was held in Atlanta in 2001. This paper, titled "Learning at a Distance in South Dakota: Description and Evaluation of the Diffusion of Distance Education," was also included in the *Proceedings of Selected Papers on the Practice of Educational Communications and Technology* (2002).

Shannon Amiotte (Star Schools Project Manager) and Steve Wheeler (Evaluation Team Coordinator) co-presented a paper at an international conference held at the University of Plymouth, England in April 2002. The paper documents some of the key activities and outcomes of the SDADE and DDN and was titled: "Resistance to Change and the Tyranny of Distance: Documenting the Effects of Distance Education in South Dakota" (Wheeler & Amiotte, 2002).

A third paper, written by Steve Wheeler focused on the impact of the project on Native American populations of South Dakota. Titled "Dances with Wolves, Learns with Computers", the paper was well received at the Association of Learning Technologies Conference at Sunderland University, England, in September 2002 (Wheeler, 2002).

Other publications were undoubtedly written about various activities of the SDADE. Much about the SDADE project is interesting and important. Publications will share this with others in the field.

Management of the SDADE

Several interviews have been conducted with staff at the Department of Education and Cultural Affairs (DECA), including one midway through the project with the Project Manager of the South Dakota Star Schools Project, Ms Shannon Amiotte.

Ms Amiotte was generally very positive about distance education initiatives across South Dakota. She recognized that the DDN and SDADE have brought a time of radical change to a well-established structure, and that this period of transition presents a challenge. She was enthusiastic about current teacher training, but recognized the need to address the issue of those teachers who are not yet receptive to the use of technology in the classroom, who have a genuine fear of technologies, or a shortfall in skills required to use instructional technologies effectively.

As project manager, Ms Amiotte acknowledged the need for accountability and research and mentioned plans currently in development to collect, analyze, and report data related to SDADE outcomes. She expressed excitement about the extensive use of the DDN, and the attempt to keep up with program scheduling and teacher support and training. There is an evident feeling of commitment from her team, and a genuinely open desire from the project leadership to assist schools and other users of the DDN in any way possible.

Housing the leadership of the SDADE in and with the South Dakota Department of Education was considered an extremely accountable decision that enhanced the effectiveness of the project since it brought the activities of the SDADE closely in line with other state initiatives. The impact of this decision is still to be determined. Unanticipated outcomes of the decision to closely affiliate SDADE efforts with Department of Education activities were to improve the leadership visibility of the Department and to provide a level of flexibility to those in the Department attempting to increase the use of the DDN. While the potential existed for the distraction of SDADE

leaders by Department initiatives and requirements, the evaluation team did not identify any such problem.

## Summary of Results

By the time of writing this final report, the growth of technology use in the schools and universities continues, although as can be expected with a project of this scope and size, problems continue to exist. Organizational constraints sometimes militate against full and free use of the DDN, due to scheduling conflicts, and there have been occasional obstructions to the speedy arrangement of contracts with external organizations. Some teachers reported that they were either reluctant to use the new technologies, or doubtful of their efficacy. This was compounded by intermittent problems with quality and problems with networks that served to discourage some teachers from regularly using the videoconferencing systems, or in a few cases simply rejecting the technology. One or two schools requested that the DDN equipment be removed from their schools and used elsewhere because they could not foresee using it.

Management of the project has been both efficient and effective, and there has not appeared to be any significant logistical or operational problems. The problems that arose in the early days of the project were dealt with swiftly and decisively. It must be acknowledged that throughout the life of the project there were several staff changes, including a change of project manager. Although this can have an unsettling effect on a project due to loss of continuity and an ongoing requirement to train new team members, the SDADE project did not appear to suffer, and the team continued to function well without any noticeable reduction in the quality of its work. Several members, including the original project manager left and were quickly replaced to enable a reasonably seamless delivery and management of activities. Problems of lack of office space were superficial, and were largely overcome by 'hot-desking' between the team members. Initial problems with procurement of contracts and services were resolved satisfactorily.

The report of the Second Tier Evaluation Team (Part VI) also identified notable aspects of the South Dakota Alliance for Distance Education Alliance. In summary, the obvious desire of SDADE leaders to focus on children, teachers, and local schools was evident to evaluators. Among those activities that were completed at the time of this report, those listed above are considered notable.

In summary, this section of the final report of the SDADE evaluation team was to call attention to notable and interesting activities of the SDADE that were completed. As is stated again later in this report, the SDADE project has been carried out with careful consideration to accountability. SDADE leaders and partners were found to be very diligent at completing most activities. Also, the evaluation team found that activities, projects, reports and other products of the SDADE were at least done effectively, and in many cases, probably most, were found to be outstanding. The ultimate impact of the SDADE is yet to be determined, but the importance of the project is undeniable. South Dakota's star schools project is a model of other states and regions. The attempt to

influence the adoption of the innovation distance education by applying the principles of the Diffusion of Innovations theory (Rogers, 1995) is outstanding and potentially may be the longest-lived consequence of this project. It is educational theory applied to educational practice.

## PART III - SOUTH DAKOTA TEACHER PROFILE – PRE AND POST SURVEY RESULTS

### Background

In order to obtain a profile of information about South Dakota teachers during the period of the SDADE project, a survey was sent twice, once at the beginning of the project and again near it's conclusion, to a random sample of teachers derived from a list supplied by the Department of Education. The survey was called the SDADE Questionnaire. Additionally, the same survey was administered to small selections of teachers who participated in specialized training and in Distance Teaching and Learning Academies.

The SDADE Questionnaire had four sections (Appendix D). The first section asked demographic questions. Part 2 was a modified version of the Hurt, Joseph and Cook Innovativeness Survey (IS), a standardized measure of personal innovativeness (1977). Part 3 was a modified version of the Hurt and Tiegen (1977) Perceived Organizational Innovativeness Scale (PORGI), a test used to identify employee's opinions about the innovativeness of their organization. The final section of the SDADE Questionnaire asked specific questions about distance education in South Dakota. The IS and PORGI have been used in hundreds of studies and have comprehensive normative data available for comparison purposes (Simonson, 2000).

The SDADE Questionnaire was used to identify a profile about South Dakota teachers and to answer the following research question:

> What are the characteristics of South Dakota teachers, including their personal innovativeness, the perceptions of their school's innovativeness, and their attitudes about distance education in South Dakota?

### Approach Used

A five-step process was followed to collect information to develop a teacher profile and to obtain information related to the research question. First at the beginning of the SDADE project, the SDADE Questionnaire was developed and pilot-tested (Appendix D). Second, a list of South Dakota teachers was obtained and 100 names and addresses were randomly selected. Third, these teachers were mailed a copy of the SDADE Questionnaire with a postage paid return envelope. Fourth, the SDADE Questionnaires that were returned were analyzed. Finally, two years later, the process was repeated using a new randomly selected group of teachers.

In addition to the approach described above, the SDADE Questionnaire was administered to groups of teachers that had either participated in distance education training or who were attending a Distance Teaching and Learning (DTL) Academy.

## Results

Results obtained using the SDADE Questionnaire from each of the four groups are reported in tables in Appendix D. Tables designated with an "a" describe data collected from those educators who participated in specialized training. There were 168 in this group. Tables with a "b" report on data collected near the beginning of the SDADE project from the first random sample of South Dakota teachers. Tables designated with a "c" report on data collected from a sample of DTL attendees, and Tables with a "d" summarize data collected near the end of the SDADE project from the second randomly selected group of 150 teachers.

## Profile

The following profile of the South Dakota educator was developed by analyzing the data reported in Appendix D.

> The South Dakota teacher who completed the SDADE Questionnaire was a female in her early forties with a Bachelors degree and fifteen additional graduate hours. She probably owned her own personal computer, had a moderate knowledge of distance education and instructional technology, was average in personal innovativeness and worked for a school that was average to slightly above average in innovativeness. She would be modestly positive about distance education, as would her school, but she would not know a great deal about the implementation of distance education in South Dakota. She was neutral about being personally involved in distance education, as were her colleagues. The typical teacher that completed the SDADE Questionnaire felt that distance education might help education in the State, but that more training in distance education for teachers was needed. Finally, this teacher was most likely to emulate and look up to another classroom teacher.

Interestingly, this profile did not seem to have changed during the two years of the SDADE project. Also of interest were the data obtained from teachers who participated in specialized training and those who were attending DTLs. The DTL group possessed a profile similar to the average teacher. However, the group that participated in specialized training seemed to be more positive and more knowledgeable about distance education, probably because this group was dominated by teacher leaders and were as a group more highly innovative.

Certainly, the development of a generalized profile from a small number of returned surveys is a tenuous activity. Just as obviously is the observation that the data collected tended to be consistent over time. These data are best interpreted in the context of other data and information, such as evaluator observations, site visit reports, external reviews, and superintendent comments, as is the intent of this final report of the SDADE evaluation team.

## PART IV - SCHOOL SITE VISIT SUMMARY

### Background

One of the most important and time consuming efforts of the SDADE evaluation team were the site visits. One evaluation specialist and the two evaluation assistants spent almost six months planning, conducting, and writing the conclusions of the site visit effort.

Schools statewide were invited to participate in the Site Visit activity, and a number were identified by SDADE project leaders as potential participants. Evaluators contacted these schools. Once suitable dates for a visit were mutually agreed to, the visit was conducted. Normally, two evaluators visited each school and spent one day interviewing teachers, administrators, and students. Evaluators visited classrooms, Digital Dakota Network rooms, and other locations where instructional technologies were in use. Carefully planned focus groups were held with students and teachers, and in many cases pictures of significant locations in the school were taken.

During and following each site visit, the evaluators took detailed notes. Discussions between the two evaluators were held in order to reconcile observations, and finally a draft report was written. Reports were shared between evaluators and were reviewed by the site visit coordinator. School site visit reports were also returned to an appropriate school administrator for review and internal use.

Other members of the evaluation team studied the site visit reports and prepared a summary report that provided an overview of the collection of site visit reports. Finally, the site visit reports were edited and compiled by an information specialist.

The *Site Visits Report* was published in draft form and reviewed by members of the evaluation team and by SDADE project leaders. Suggestions and corrections were offered and were incorporated into the final, *Distance Education in South Dakota: Site Visits Report-Revised*. This report is summarized below, but it should be reviewed in its entirety to obtain the fullness and richness of how distance education is being adopted in schools in South Dakota.

### Report Summary
(Mark Hawkes, primary author)

Harry Truman once said that he needed more one-armed economists advising him on economic policy. His motive behind this statement stems from their equivocating advice and counsel that was often framed as “on the one hand . . . and on the other hand. . .” President Truman’s encounter with diverging information is not unlike the experience of the site visit evaluators who heard school personnel both extol and caution the use of room-based interactive video technology. Site visit descriptions paint pictures capturing some of the local variation and detail of implementing interactive video experiences for learners in a way that helps us understand the complexities, efforts, and sometimes frustrations and successes faced by the participants.

Short of developing sweeping generalizations about the use and role of the Dakota Digital Network (DDN) in South Dakota schools, it is possible read the site visit reports and develop a collection of common findings. This is the goal of this analysis. Each of the site-visit reports was examined for ideas that would reveal what considerations should be made to support these schools, and others like them in applying modern telecommunication technologies.

In general, the schools profiled in these visits have much in common. They are generally rural, predominantly Caucasian (with exception of Native American dominated Shannon County Schools), and struggle under state financing policy stemming from a property tax cut initiative.

Table 1. Summary statistics of case study sites.

| | **Average** | **Range** | **State Ave.** |
|---|---|---|---|
| Community Size | 7,278 | 339-59,607 | 1,833 |
| Student Population | 896 | 131-4,000 | 713.7 |
| Certified Teachers | 64 | 12-249 | 51.6 |
| Student to computer ratio | 2.41:1 | .90-4.79:1 | 3:1 |
| Available seating for DDN | 20 | 8-75 | NA |

*NA=Information Not Available*

Four themes that run through the site visit reports provide the framework for this analysis. The first is that South Dakota schools are filled with educational technologies and professionals who can use them. The second theme is the DDN system is an underutilized resource in most schools. Third, several critical factors exist to limit the use of the DDN for instructional purposes in schools. The final theme is the conditions suggested by schools, which make for optimal DDN use.

## Technology Use in the Schools

Thanks to forward thinking leadership of school administrators, along with teachers willing to take risks and to work hard, South Dakota sets the pace for technology infrastructure building in K-12 schools. The technology inventory of schools profiled in these site visits is vast. Almost every classroom has a cluster of networked computers. Many schools support both PC and Macintosh platforms. There is one computer for every two students in these districts. Many of these schools have expanded their existing networks with wireless networks and portable laptop labs. Peripherals include arrays of printers, digital still and video cameras, analog cameras, smart boards, scanners, and personal digital assistants. Software includes tools for photo and video editing, desktop publishing, graphics animation, computer-aided design and a host of additional productivity task functions.

To work with this array of technology are knowledgeable staff. In one school, for example, all teachers in the school have Internet home pages where they post student assignments, activity calendars, and other information for parents and students. One school's teachers conduct performance assessments on student projects using handheld devices with rubrics. An algebra teacher integrated a smart board into her class activities and used it to access the Internet and other resources. Some schools' web-cast sporting events and other school activities. In one

school, student attendance is taken using an online database program—designed by a high school student.

It is apparent after reading the site visit reports that South Dakota's investment in educational technology is a success. In many remarkable ways, instructional technology is being used to increase teacher efficiency for administrative and instructional purposes and improve learner understanding.

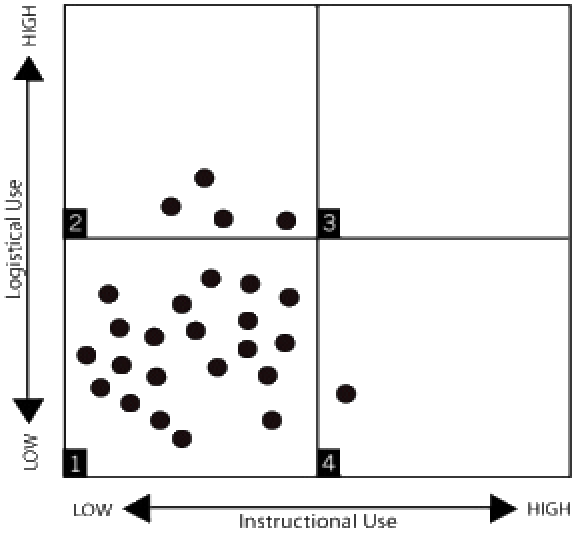
## The Digital Dakota Network (DDN)

The DDN is underused—especially for curriculum enrichment and collaborative activities. As the site visits explain, the use of the DDN generally falls in two broad categories. The first category involves uses that are organizational or informational in nature. Examples include seeding wrestling tournaments and bracketing the state volleyball tournament. Regional consortia meetings between school superintendents or project meetings for other educational service providers like LOFTI (Learning Organizations for Technology Integration) are other examples of this category of DDN use. On occasion, community members use the DDN for legislative cracker barrel sessions, or by other agencies like mental health care professionals.

Teacher professional development events also use the DDN. Teacher professional development usually takes the form of courses delivered to individual or small groups of teachers during evening hours. These courses are usually delivered by higher education institutions in the state and involve credentialing, certification, or the attainment of advanced degrees. More school-school related professional development events occur when same grade level or content area teacher meetings are hosted on the DDN.

The second category of use is instructional. Ongoing collaborative projects between classes and district are at the top of the scale of instructional use. These collaborations include activities like Spanish-speaking language practice and culture study between high school students in two schools. The "Days of Our Lives" unit that has Native American 4$^{th}$ graders in one school comparing their lives and culture with those of 4$^{th}$ grade students in another. A "Buffalo Round-Up" unit hosted by DECA's Office of Technology staff coincides with the Governors' Buffalo round up and helped students to study the importance of the Buffalo to Native Americans and the high plains environment. A 4$^{th}$ grade teacher conceived and guided a "South Dakota Legislative Unit" that has participating schools adopting a legislator, tracking the progress of bills, and tying these experiences to the functions of the three branches of government in the state.

Figure: Map of DDN use on instructional and logistical dimensions.




Interestingly, and as Figure 1 shows, most schools are located in the lower left-most quadrant of the graph indicating both low logistical and instructional use of the DDN. It is apparent from the site visit reports that the DDN is an underutilized resource.

Digital Dakota Network: Implementation Issues and Barriers

***Shared facilities.*** The majority of DDN systems reside in high traffic areas, or rooms smaller than average classrooms. In one school, administrators have no options but to put the system in a multi-purpose room where it must compete for time with other school events. The DDN in one school is in the media center where activities there might be disruptive to other students. In another school, the system sits in a computer lab where classes are scheduled most hours of the day. In a third school, the DDN classroom is located in a small room in the high school that seats about eight students around three tables shaped in a "U." The set up works fine for two- to three students at a time taking an AP course from another location, but it's impossible to fit an entire class in the room. Elementary classes, which use the DDN much more often than the middle and high schools, have been invited to bridge to their collaborating sites from facilities at a State University.

***Inconsistent Bell Schedule.*** One of the schools has been participating in interactive video delivered courses since 1999 as a part of the Southeast Interactive Long Distance Learning Lab (SILDL). Several distance-learning classes are scheduled each semester by the consortia. But, because they have been unable to synchronize their schedules, the principal at one site visit school estimates students miss up to 22 days of instruction in a class.

According to one principal, the largest barrier to using the DDN is that their school day starts at 8:30 a.m. But, DDN classes start at 9:00 a.m. Students wanting to take classes have to dedicate both their first and second periods to a single class. Similar concerns were voiced in several other schools.

***Teacher Incentives***. During focus groups, teachers were asked what it would take to encourage them to use the DDN more. The teachers replied, "incentives!" The agriculture teacher one High School would like to see his DDN class count as two classes. Teachers indicate, "A lot of time goes in to teaching distance education classes." It would be nice to be "compensated in terms of release time or wages", they say.

***Lack of Know-How***. Many teachers indicate they are unfamiliar with the DDN. Some say that technology coordinators in their school are also struggling to learn how to operate the system. Even teachers who have participated in Distance Teaching and Learning Academies indicate they are too inexperienced to use the system. Teachers currently attempting to use the system indicate they need additional training and alternative methods for presenting information and engaging students.

***Lack of Time.*** Teachers, notably those from smaller schools, indicated that the responsibilities and assignments they have in their schools are varied, numerous, and leave little time for creatively structuring course work for delivery or interaction on the DDN. One teacher said:

*I would like to do more with the DDN, but it's just one more thing to do.*

***System Stability.*** Almost every teacher who has used the DDN has an equipment failure story. Video but no audio, audio but no video, mis-scheduled bridge, mysteriously unplanned breaks in connections. Most often, technical failures were caused more by human than system error. Still, they are considered by many teachers as significant enough to discourage them from being involved again.

***Wait and See.*** More than one school administrator admitted that they were reluctant to encourage a significant investment of time and energy into the developing curricular activities for the DDN because they are unsure about the level at which the new governor's administration will support the system.

Other barriers to DDN use include:

- Lack of interactivity during programmed events.
- Lack of information about DDN events and collaborative opportunities.
- Inconsistent grading policies between originating and remote sites.
- High school use dominating the system.

## Conditions for Optimal Use of the DDN

***Planning.*** One teacher who has watched her colleague conduct numerous collaborations in Spanish has noted that extensive planning on her part was necessary for the successful use of the DDN. This includes detailed descriptions of her activities, e-mails to confirm and reconfirm bridge times, and well planned but flexible lesson plans.

***Remote Site Supervision***. Teachers who have delivered courses over the DDN indicate that supervision at remote sites not only "cuts down on the possible horse play," but also provides a

resource for explanation and elaboration to students who may not be grasping a concept or the details of an assignment.

***Incentives***. Many teachers find intrinsic rewards in working with the technology and students at a distance, but others do not. Incentives for those who use the DDN should be considered.

***Motivated Students.*** In cases where students are taking courses from another school or institution, school leaders indicate that students who are successful in taking distance courses are self-motivated, unabashed about asking for clarifications or questions, and come from a supportive household or family.

***Source of Leadership.*** There's a pretty strong correlation between schools that do not use the DDN very often and schools whose administration does not perceive that the technology has much of an instruction/pedagogical role in the school. Schools making significant use of the DDN do so with principals or superintendents with foresight to see the potential of interactive video systems and to see ways that barriers can be overcome. Occasionally there will be one or two teachers who stand out as opinion leaders and give their time freely to inform other teachers about DDN use. But the key is the building leader, and they must somehow become converts to the resource so that they can then encourage its use in their schools.

## Conclusion

The DDN has not yet achieved the level of use of other educational technologies. Teachers are unsure where and how the use of an interactive technology like this fits into their curriculum. Elementary level students have less access to the system than secondary students.

Hopefully, the positive attitudes of educators towards the DDN will evolve to take the position of this teacher:

> *The DDN is really going to be something we will be using daily. We just need to adjust our thinking. We have so much technology here, I get excited about what we can do with it; it's taking us a while to get integrated. But, it's valuable.*

Finally, in order to truly understand the status of distance education in the many schools of South Dakota a person would need to visit many, if not most, of them. The evaluation team attempted to provide this understanding by visiting dozens of schools. The summary provided above focuses on important conclusions identified by evaluators. A careful reading of the entire site visit report will permit anyone to develop his or her own conclusions. *Distance Education in South Dakota: School Site Visit Reports (2003)* is a 162-page monograph that summarizes the visits to 31 schools. Any one concerned about the adoption of distance education by the schools and teachers of South Dakota should carefully read it.

In addition to the narrative there are over a hundred photographs. After reading this comprehensive report one is left with the feeling that teachers are generally optimistic about distance education, but have not yet seen the positive impact of this innovation on themselves, their schools, or their students.

**Site Visit School Statistics**

| District | DDN Room Size (Seats Available) | Total Students | Computers (instructional use) | Student to Computer Ratio | Certified Teachers | Community Size |
|---|---|---|---|---|---|---|
| **Burke** | 10 | 253 | 89 | 2.84:1 | 24 | 700 |
| **Canton** | 10 | 954 | 500 | 1.91:1 | 64 | 3,000 |
| **Chamberlain** | 25(2) | 875 | 600 | 1.46:1 | 80 | 2,411 |
| **Chester** | 12 | 353 | 120 | 2.94:1 | 25 | 500 |
| **Custer** | 10 | 981 | 650 | 1.51:1 | 82 | 1,860 |
| **Dakota Valley** | NA** | 810 | 400 | 2.23:1 | 62 | 6,434 |
| **DeSmet** | 14 | 300 | 70 | 4.29:1 | 27 | 1,160 |
| **Faith** | 25(2) | 215 | 175 | 1.23:1 | 19 | 571 |
| **Flandreau** | 10 | 800 | 322 | 2.48:1 | 70 | 2,500 |
| **Gayville-Volin** | 22 | 214 | 125 | 1.71:1 | 19 | 1,200 |
| **Grant-Deuel** | 30 | 287 | 135 | 2.13:1 | 19 | 412 |
| **Harding County** | 20 | 230 | 132 | 1.74:1 | 27 | 1,353 |
| **Huron** | 22(2) | 2,328 | 1,000 | 2.33:1 | 148 | 14,165 |
| **Kimball** | 30 | 310 | 84 | 3.69:1 | 23 | 745 |
| **Lemmon** | 24 | 458 | 200 | 2.29:1 | 38 | 1,400 |
| **Madison** | 8 | 1375 | 460 | 2.99:1 | 88 | 6,540 |
| **Marion** | 20 | 293 | 180 | 1.63:1 | 24 | 853 |
| **Mitchell Tech. Institute*** | 28 | 906 | 300 | 3.02:1 | 73 | 14,558 |
| **Mt. Vernon** | 8 | 272 | 130 | 2.09:1 | 22 | 477 |
| **Pollock** | 8 | 131 | 102 | 1.28:1 | 12 | 339 |
| **Rapid City (Central HS)** | 35 | 2,198 | 800 | 2.75:1 | 112 | 59,607 |
| **Redfield** | NA** | 719 | 150 | 4.79:1 | 55 | 2,897 |
| **Shannon County Schools** | 25(3) | 989 | 1,100 | 0.90:1 | 108 | 12,466 |
| **Spearfish** | 35 | 2,200 | 1,100 | 2.00:1 | 129 | 8,606 |
| **Sturgis High School** | 18 | 835 | 200 | 4.18:1 | 53 | 24,233 |
| **Watertown** | 24 | 4,000 | 1,800 | 2.22:1 | 249 | 20,237 |
| | | | | | | |
| **Average** | **20** | **896** | **420** | **2.41:1** | **64** | **7,278** |
| | | | | | | |

*

** *NA= Information Not Available*

## Glossary

| | |
|---|---|
| AP | Advanced Placement |
| CAD | Computer Aided Design |
| DACS | Dakota Assessment of Content Standards |
| DDN | Digital Dakota Network |
| DE | Distance Education |
| DIAL | Dakota Interactive Academic Link |
| DTL | Distance Teaching and Learning Academy |
| LOFTI | Learning Organizations for Technology Integration |
| SDLN | South Dakota Library Network |
| SILDN | Southeast Interactive Long Distance Learning |
| SIVN | Sanborn Interactive Video Network |
| STW | School-To-Work |
| TIE | Technology and Innovations in Education |
| TTL | Technology for Teaching and Learning |

## PART V - SCHOOL SUPERINTENDENT INTERVIEWS – SUMMARY AND RESULTS

Teresa Calderone, Researcher

*"The most important thing in communication is to hear what isn't being said."*

--Peter F. Drucker

The state of South Dakota has a plan to improve the quality of education in the state's school systems. The state had installed a technology rich learning network that connects all of South Dakota's School Districts. This network provided the state educational system with Internet and video conferencing service. The network is called the Digital Dakota Network (DDN). The Digital Dakota Network consisted of a fiber optics and cable network backbone, with Ethernet ports, capable of supporting Internet and video conferencing. Each school district had video conferencing equipment and can use the Internet and video conferencing service at no cost to the school (Edman, 2002, pp. 22-25).

South Dakota is an ideal state for the application of distance education due to its rural and isolated K-12 schools. The state school systems of South Dakota could benefit from sharing educational resources (Bauck, 2002). More than a year has passed since the DDN began operating. Although needs existed, the DDN is not being used to its full potential by the school districts (Bauck, 2002, chap 2).

This study looked at the role of school superintendents in change. Specifically, this study examined rural school superintendents and the perception of their role with respect to the diffusion of distance education in their district. The study was based on the Rogers (1995) *Diffusion of Innovations*. The diffusion process used as a strategy to address the problem studied. Telephone interviews were conducted to collect data about superintendents' perceptions of their role with regards to the Digital Dakota Network and distance education.

This chapter looked at the design of the study and the findings of the research. The findings are qualitative data. The data were collected by interviewing the school superintendents on the telephone. This chapter covered the results of the interview responses, data collection, categorization of responses, themes and patterns, and a summary of the chapter.

### Results of the Interview Responses

*Data Collection*

This was a study of school superintendents and their role in change. The method of study was qualitative data collection. The strategy used to collect the data was telephone interviews. The type of interview that was used for this study was key informant interviews (Rubin & Rubin, 1995). The method and strategy of the study was used because the participants had knowledge or perceptions that would not otherwise be available to this study (Gall, Borg, and Gall, 1996).

*Qualitative Data*

Qualitative data was gathered through the use of telephone interviews. The goal was to interview fifteen randomly selected superintendents who allowed site visits to their school districts. A total of 11 superintendents (10 males and 1 female) participated in the study. Several attempts were made to contact 15 participants. Two participants missed scheduled interview times and did not return phone calls after several attempts. Several attempts to contact others on the list were unsuccessful. This study was conducted using the responses from 11 participants. All 11 participants were asked the same four questions. A telephone interview script was used for the interviews (see Appendix A). Interview responses were recorded on the telephone interview guide (see Appendix B).

## Categorization of Responses

*Grouping by Question*

The responses were first categorized by question in summary format. The first interview question inquired about the participants' perception of their role in change. The comprehensive list of the responses can be found in Appendix C. Most respondents to the first question felt that their role was to ensure that the Digital Dakota Network was available for use. They provided adequate financial resources and took measures to have resources available to keep it operating technically. Most respondents had an interest in bringing in classes that did not exist within their district. Most respondents receive distance education rather than teach over the DDN. A few respondents used the DDN for meetings. A few respondents saw its value as the "teaching wave of the future".

The second interview question inquired about the motivation to use distance education. The comprehensive list of the responses can be found in Appendix E. The responses were divided in terms of promoting the use of the DDN. An underlying theme regarding promotion of the Network was student needs and providing new education opportunities. The respondents had a genuine interest in the needs of the students. Most respondents described time and money as motivating factors for getting teachers to use the DDN. Teaching at a distance requires a time commitment on both ends of the teaching spectrum. It takes time to prepare and to maintain the virtual classroom. For example, redesigning the course for distance education, collecting and grading homework assignments and distributing, collecting and grading tests are perceived as different and more time consuming in a distance education environment. Some respondents reported that they provide a stipend to teachers, but the amount of the stipend is not a motivation for most teachers. One respondent is considering a substantial increase in the stipend in 2004. The availability of having advanced classes is a motivating factor to use the DDN, especially foreign languages. A few respondents use the DDN for meetings and believe that role modeling is something that would motivate teachers to use the Network. Most respondents mentioned the community as a user of the network. Some respondents reported that the community makes use of the network for classes. One respondent helped teachers get home computers at a reduced price and then ensured that those teachers had full access to the school's network from home. Professional development for technical skills was provided to the teachers. The respondent reported that this was one way of integrating teachers with technology.

The third interview question dealt with the vision for distance education. Most respondents had an interest in using the DDN for meetings. Some respondents saw the need to conduct meetings, while others already had meetings and wanted to have more meetings over the Network. Some of the same respondents thought teacher-to-teacher meetings for support and ideas would be beneficial. Most respondents had an interest in receiving staff development over the DDN. Some respondents report an interest in distance education for kindergarten and K-3 children. One respondent thought that the DDN would be considered for home schooling. Another emerging theme is the sharing of educational resources for advanced and special interest classes to include advanced foreign languages and college preparation. More than one respondent was interested in knowing if the different networks within South Dakota had the capability of interfacing with one another. The ability to interface with other networks would provide more educational opportunities to the school districts.

The fourth question dealt with impact of external factors. The question asked was about the declining population and school census trends in South Dakota. All respondents had an interest in sharing census projections with school staff as well as the community at large. Most respondents reported a stabilization or decline in population. One respondent reported a growth trend. A few respondents associated the flexibility of distance education as an important solution for providing educational resources to districts on the decline. One respondent was interested in distance education for the flexibility regarding the use of full-time equivalents (FTE) if shared with other schools.

*Grouping by Category*

The data from the four were categorized and presented in table format. Grouping by category presents a description of the data by the number of incidents occurring within the question set.

Table 1

Perception of role of the superintendent

| Category | Incidence |
|---|---|
| Ensure financial support | 11 |
| Urge teachers to use the DDN as a resource | 8 |
| Directly oversee educational opportunities for students | 5 |
| Promote the DDN | 5 |
| Ensure technology is working | 4 |
| Set the vision for distance education | 2 |
| Encourage teachers to teach over the DDN | 1 |
| Provide teachers with resources (other than financial) | 1 |

The responses to question two provide the data for Table 2. Categories were identified and the incidences are shown in Table 2.

Table 2

Motivation to use distance education

| Category | Incidence |
|---|---|
| Based on student need | 9 |
| Advanced or specialty classes | 8 |
| Teacher reward for teaching over the DDN | 6 |
| Courses not offered by the school district | 5 |
| Develop teacher skills | 3 |
| Meetings | 3 |
| Community | 2 |

Question three related to the vision of distance education. .

Table 3

Vision of distance education

| Category | Incidence |
|---|---|
| Professional staff development | 5 |
| Community use | 4 |
| Special interest classes for students | 4 |
| Meetings | 3 |
| Pre-school, kindergarten | 3 |
| Teacher to teacher support | 3 |
| Home schooling | 1 |
| Interface with other South Dakota network | 1 |

The information regarding declining population and school census provided the basis for the fourth question. The intent of the question was to collect data related to impact of the external factors on the DDN.

Table 4

Impact of external factors

| Category | Incidence |
|---|---|
| Information available to teachers | 11 |
| DDN has a role as a solution | 2 |

## Themes and Patterns

During the analysis of the data gathered through the telephone interviews, themes and patterns emerged among the responses to the questions. All respondents acknowledge a responsibility to financially support the Digital Dakota Network. Most superintendents reported an interest in ensuring that the technology and equipment needed to run the Network was operational. These were not unexpected results. A pattern was identified across the four questions. The four themes included receiving core and advanced courses over the DDN that were not available within the school district, using the DDN for professional development for teachers, increasing the use of the DDN for meetings, and getting the community to use the DDN. There were two emerging themes. They are the use of the DDN for younger children in K-3 and the ability to connect or interface with other networks through the DDN. A theme that appeared to have a low priority was the idea of urging teachers within the respondents' school district to teach over the

DDN. The barriers to teaching over the DDN seem to be a lack of time to prepare, an increased workload, and a low reward or incentive system.

## Summary

This section looked at the design of the study and the findings of the research. Qualitative data were collected by interviewing 11 South Dakota school superintendents over the telephone. This chapter discussed the findings of the interview responses and provided a categorization of responses by question and by looking at patterns and themes across the questions. The identified categories are displayed in table format and were rank ordered by incident. Patterns and themes were presented through a discussion of the findings. The superintendents place high priority on maintaining the DDN both financially and technically. Most superintendents are interested in bringing in educational resources that are not available within their own school district. Most are interested in increasing the utilization of the DDN by using the DDN for more meetings, staff development program, and community use. There appears to be a low interest in urging teachers within the school district to teach over the DDN. Lastly, there are two emerging themes that were identified in the data. They include use of the DDN for younger children, specifically K-3 and the need to interface with other networks.

## Discussion of Interview Results

*"Change starts when someone sees the next step."*

--William Drayton

In this study, school superintendents were interviewed about the Digital Dakota Network. The purpose of the interviews was to gather information about the role of the superintendent in change regarding distance education. This chapter covered the results of the study, conclusions from the interviews, comparisons to other research, and recommendations from the research. The chapter concludes with a summary of the study.

## Results Summary

The former governor of the state of South Dakota implemented the Digital Dakota Network (DDN) to improve the quality of education in the state's school system. The DDN is a technology rich learning environment. The DDN is composed of V-tel video conferencing equipment. The PC-based video conferencing system includes two 32' monitors, two cameras, audio components, a codec for compressing video, a document camera, an electronic whiteboard, LAN connectivity capable of supporting the bandwidth of compressed video, networking capabilities, collaboration software, and picture in picture capabilities. All 176 school districts in the state of South Dakota are equipped for distance education. The Internet and video conferencing service for distance education is provided free of charge to all of the schools (Edman, 2001, pp. 22-25).

Distance education is vital to South Dakota because one of the greatest challenges to education in South Dakota is the rural nature of the state and the geographical distances between people

and towns. Distance education provides the opportunity to improve the quality of education because learning resources can be shared throughout the state's school system.

Another challenge to education in South Dakota is the population shift. According to year 2000 census data, the state's population has experienced a 10% growth. The growth in population is misleading because 1/3 of the population of the state lives in two counties. The remaining residents are spread across many country miles of the state (South Dakota Profile, 2002). The trend shows a decline in enrollment in many of the small rural schools. Many schools are forced to reduce their number of teachers. The combination of the rural nature of the state and the population trend diminishes the opportunities for quality education in the rural towns that are most effected by declining population trends (Bauck, 2002).

The opportunity provided by the Digital Dakota Network is limitless. The DDN has the potential to eliminate the distance between any student in the state and any state teaching resource. The state of South Dakota has a great interest in making the DDN a successful means of maintaining quality education. After the DDN was built and hardware and software were installed, South Dakota established the Office of Technology within the Department of Education and Cultural Affairs. The office provides the leadership and support to K-12 schools in regard to technology and distance learning. The purpose of the office is "researching, analyzing, procuring, and distributing programs and methods using educational technology in South Dakota K-12 schools and classrooms" (Bauck, 2002, p. 10).

The Office of Technology created the Technology and Learning Academies and the Distance Teaching and Learning academy. The academies are designed to build teacher competencies and skills in distance learning and technologies for learning. The academies have served nearly 30% or 2,490 of the state's teachers.

Despite the effort to promote distance education and ability to share resources, South Dakota is not fully utilizing the Digital Dakota Network. The Office of Technology and Cultural Affairs has determined that there is an underutilization of the Digital Dakota Network. Despite the apparent advantage of having a digital network for distance education in every school district and the availability of teacher training and learning opportunities, the DDN has been used very little during the first year of its existence (Bauck, 2002).

One aspect of the statewide problem was investigated in this study. This study investigated the superintendent's role in change related to distance education and the Digital Dakota Network. This study looked at the role of change agents, opinion leaders, and the concept of diffusion. Specifically, the role of rural school superintendents in the diffusion of distance education in South Dakota was studied.

Through the use of the Digital Dakota Network for distance education, South Dakota is in a unique situation to maintain quality education in the state's school system. The DDN and distance education allows small school districts to share teachers and use video classes to enhance the educational opportunities for students (Bauck, 2001).

Distance education is not new to the state of South Dakota. In the 1980's, the South Dakota Medical Information Exchange (SDMIX) implemented a statewide medical distance learning system. Since then, the University of South Dakota, School of Medicine, has successfully used distance education to deliver hundreds of continuing and graduate-level medical education programs and nursing education programs (Chute, et al, 1999).

The Digital Dakota Network was a major cost and resource commitment by the state of South Dakota. The state implemented the DDN is three phases. The phases were wiring the schools, connecting the classrooms, and educating the teachers. The implementation for the three phases covered a period of four years beginning in 1996 and ending in 2000.

Distance education is defined as "institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors". There are four components to this definition of distance education (Simonson et al, 2003). The state's school system is an ideal environment for distance education. All four components of the definition of distance education are applicable to South Dakota.

Distance education in South Dakota is considered an innovation. Rogers defined an innovation as an idea, practice, or object that is perceived as new by the organization. Innovations are either adopted or rejected by the organization (Rogers, 1995). Innovation has been studied in South Dakota regarding the DDN. Simonson and Sparks (2001) studied the diffusion of innovations (Rogers, 1995) as a theoretical base for distance education in South Dakota. Bauck (2002) used the Rogers (1995) for a study on the diffusion of video conferencing on the Digital Dakota Network. In the SDADE study, research was done on distance education within the state school system. One component of the SDADE study was site visits to several South Dakota schools. During the site visit, distance education activities and instructional technology activities were observed. The site visits report concluded that the Digital Dakota Network has not yet achieved the level of use of many other educational technologies. The teachers that were interviewed during the SDADE site visit reported a lack of knowledge on how to apply DDN technology to their curriculum. The teachers reported they did not have a level of confidence and skill on how to use the technology. A correlation existed between schools that do not use the DDN very often and schools who have little administration support for the educational use of technology (Simonson, 2003).

## Conclusions from the Interviews

This study was conducted over a several month period. School superintendents were interviewed by phone about how they perceived their role in change related to distance education and the Digital Dakota Network. The interview questions asked about perceptions of their role, motivation to use distance education, vision for distance education, and impact of external factors on use of the DDN. The first question related to perception of role (see Figure 1). The results of this study found that 100% of the superintendents interviewed perceived their role to one to ensure financial support to keep the DDN operational. Most superintendents (73%) perceived their role to encourage teachers to use the DDN as a resource. Almost half (45%) of the participants view their role to promote the DDN and to directly oversee educational

opportunities for students. More than half (64%) reported they were not directly involved in ensuring that the DDN is technologically operational. While most superintendents urged teachers to use the DDN for educational opportunities, almost all reported that they did not perceive it as their role to encourage teachers to teach over the DDN.

The second interview question regarded motivation to use distance education (see Figure 2). For this question, 82% of the superintendents reported that motivation to use distance education was based on student needs as assessed within the school district. About 73% reported a high motivation for advanced or specialty classes, such as, electives and 45% reported motivation to use the DDN for courses not offered by the school district. Teacher incentives, as a motivation to use the DNN, were identified by 55% of the superintendents. The superintendents reported that there were no substantial incentives or rewards for teaching at a distance in their districts. The superintendents reported that meetings were a low priority use of the DDN (27%); however, on question three (see Figure 3), 27% also report that they would like to use the DDN for more meetings.

The responses for question three were concerned with the vision for distance education in the district. The results revealed that the DDN was viewed as a method to provide professional staff development (45%) for teachers. Superintendents reported that they saw community use (36%) of the DDN as an important factor for distance education and for the DDN in the future. Of those interviewed 18% of the respondents' thought that using the DDN to teach pre-school and kindergarten was a future possibility. 18% of the respondents reported that teacher to teacher support was successful in their school district and felt that more teacher to teacher meetings was an important use for the DDN.

Question four (see Figure 4) was concerned with the impact of external factors concerning the DDN. This question asked about the discussion of declining population and student census trends. All respondents shared or made information available to teachers regarding the current and projected trends. Some respondents (18%) reported that the DDN was a possible solution to keeping the school district viable.

All participants in this study perceived their role as one that ensures financial support for local use of the DDN and providing population and trend reports to school personnel. Most supervisors are directly concerned with meeting student needs for specialty and advanced courses and courses not offered in the district. The perception was that student needs were to be met by receiving courses over the DDN. School superintendents do not perceive their role as encouraging their teachers to teach over the DDN. Most superintendents said their teachers would use the DDN if they wanted to teach a distance course. Superintendents reported that teachers had a low motivation to teach over the DDN and described barriers to teaching at a distance. The barriers reported included the additional time needed to prepare and teach a distance education course and the lack of incentives to do so.

School superintendents perceive their role as supportive. They are looked upon to provide financial support for local uses of the DDN. School superintendents had an interest in meeting student needs through distance education. It appears that receiving distance education courses is

the norm in the rural school districts rather than delivering courses. School superintendents felt they would be unlikely to encourage their teachers or promote teaching at a distance.

## Comparison of Conclusions to Other Research

The educational and instructional technology made possible by the Digital Dakota Network is an innovation in the South Dakota state school system. Roger's *Diffusion of Innovations* (1995) provided the theoretical framework for this study. An innovation is as an idea or practice that is perceived as new by the individual or social system (unit of adoption). The individual or social system decides to adopt or reject the innovation through a process called diffusion. Diffusion is defined as the process by which an innovation is communicated through channels to members of the identified unit of adoption. Adoption occurs when the unit of adoption makes the decision to use the innovation and accept it as the best course of action that is available to them (Rogers, 1995).

In South Dakota, research supports the contentions that distance education and the technology of the DDN has been adopted by the state's school systems. However, if utilization of the DDN is the measurement of adoption, then, the DDN has not become an integral part of the social system. In other words, distance education has not been fully adopted by the state's schoolteachers in the state of South Dakota. The chance for fuller adoption would be greater if the DDN for distance education was perceived as having a relatively high advantage to the teachers and students. There is evidence to support the findings. In the SDADE site report, it was concluded that the Digital Dakota Network had not yet achieved the level of use of other educational technologies. The teachers reported they lacked a level of confidence and skill on how to use the technology. More so, teachers reported that they lacked skills needed to apply distance education to their curriculum.

Complexity regarding an innovation is the degree to which the unit of adoption perceives the innovation as difficult to use or hard to understand (Roger, 1995). The more complicated an innovation, the slower its adoption will be by the adopters. The attribute of complexity was studied by Brockel (2000) with regards to the DDN. Teachers are faced with two instructional challenges in distance education. The first challenge is learning the technology in order to use it for effective instruction. Teaching at a distance is very different from face to face classroom delivery. The second challenge is the use of the distance education equipment. Brockel (2000) found that South Dakota teachers are facing this challenge to only a limited degree. In their study on the Digital Dakota Network, Simonson & Sparks (2001) found that diffusion was working effectively in South Dakota. There was a need for continued research in this area so that the initial findings can be evaluated over time (Simonson & Sparks, 2000).

The diffusion of an innovation involves experimentation (Rogers, 1995). A generally accepted practice for adopting an innovation is to try it first. The opportunity to try it first is part of the diffusion process. In South Dakota, teachers have the opportunity to try distance education within the Technology Teaching and Learning and Distance Teaching and Learning Academies (Bauck, 2002). Innovations that can be tried or gradually used on a limited basis will more likely be considered for adoption. If the results can be easily seen, the innovation will have a greater chance of adoption (Rogers, 1995). Teachers have the opportunity to observe classes

being taught over the DDN and have exposure of the distance education environment through meeting and teacher to teacher support meetings. The Office of Technology provides on-going support and educational programs for teachers in the state (Bauck, 2002). From the research reported to date, it is apparent that South Dakota teachers are in the early stages of the diffusion and adoption process. More time is needed to evaluate the adoption of distance education in South Dakota.

Another aspect of Rogers *Diffusion of Innovations* (1995) is organizational adoption. According to Rogers, an individual cannot adopt an innovation until the organization adopts it first. In organizational innovation, the main variable is implementation, not adoption. Implementation means putting the innovation into use (Rogers, 1995). In South Dakota, the diffusion process may increase at the teacher level if the state's school systems implement or begin to put the DDN to more general use. In other words, the superintendents reported that they have a vision of the DDN used for professional staff development, community use, special interest courses, and meetings.

In organizational adoption, there are three types of innovation decisions that influence diffusion within a social system. The three are optional innovation-decisions, collective innovation-decisions, and authority innovation-decisions. An optional innovative decision is defined as the choice to adopt or reject an innovation independent of the decision of other members of a system (Rogers, 1995). A collective innovation decision is when members of a system make a choice to adopt or reject by consensus. An authority innovation decision happens when the individual or individuals in charge make the decision to adopt or reject an innovation for the group (Rogers, 1995).

An authority innovation decision may work in South Dakota with regards to the DDN. In the example of the California commuters, the study discussed how organizations could constrain or determine the innovation behavior of their individual members (Rogers, 1995). In California, employees were able to make an optional innovative decision and choose among options that employers mandated (Rogers, 1995). The school superintendents are in the position to determine the innovative behavior of their teachers. School superintendents can play active roles in innovative behavior. Perhaps this is a key to successful adoption. Teaching at a distance is not in the comfort zone of most schoolteachers. Teachers require support and encouragement (Mantyla & Gividen, 1997). The South Dakota Medical Information Exchange (SDMIX) was a successful diffusion as measured by the high utilization of the SDMIX network. The approach was a two-prong approach, the change agents for the SDMIX project worked closely with the medical staff (school supervisor equivalent) to address the needs and concerns of the adopters (teacher equivalent). In addition to core training (similar to the Academy), workshops and mentors were provided on an on-going basis to the SDMIX instructors (Chute, Thompson, and Hancock, 1999).

## Recommendations

A total of 11 superintendents were interviewed for this study. The study found that superintendents had a vested interest in the Digital Dakota Network. The respondents reported that they perceived their role regarding the DDN was to provide financial support and to ensure

that the DDN was available as an educational resource. There was a low interest expressed by the superintendents to encourage teachers within their school districts to teach over the DDN. Teacher motivation to teach over the DDN is low, reportedly due to an inadequate incentive program. Recommendations from the research include:

1. Encourage school superintendents to take a more active role in motivating teachers to teach distance education courses.

2. Advise school superintendents to set measurable goals for utilizing the DDN and review the goals on an annual basis.

3. Encourage school superintendents to identify "teaching at a distance" opportunities at a high level and mandate that teachers teach at a distance.

4. Support superintendents to be instrumental in setting yearly goals within teacher development plans for teaching at a distance through strategic planning goals and objectives.

5. Provide workshops targeted at superintendents regarding uses of the DDN.

6. Provide school superintendents with organization adoption information and implementation strategies.

7. Involve teachers at some level, in the decision making process for teaching at a distance, at both the local and state level.

8. Provide teacher incentives at the state level to teach at a distance.

9. At a state level, utilize the DDN for on-going professional development programs for teachers, perhaps refresher courses and short in-services that demonstrate the use of the DDN.

## Summary

The state of South Dakota continues to evaluate the adoption or rejection of distance education as an innovation over time. The adoption of distance education and utilization of the Digital Dakota Network is considered by South Dakota as an alternative and a new means of solving an educational resource problem in South Dakota (Rogers, 1995). In this study, school superintendents were interviewed by telephone concerning their perception of their role in distance education and the Digital Dakota Network. This chapter presented an overview and summary of the problem, conclusions from the interviews, comparison to other research, and recommendations from the research.

Finally, it can be concluded from the results of this study that distance education in South Dakota has not reached the point of critical mass. Rogers (1995) describes critical mass as the point at which an innovation such as distance education diffuses without the need for direct intervention by change agents. Schools and teachers are adopting distance education in South

Dakota, but it is apparent from the results of the study that continued intervention by change agents from the South Dakota Department of Education and Cultural Affairs is necessary.

## PART VI - SECOND TIER EVALUATION RESULTS AND SUMMARY

Although the South Dakota Star Schools project was developed around existing state goals, the award of federal funds allowed the South Dakota Alliance for Distance Education (SDADE) to provide structure and a stabilizing force in a potentially chaotic environment. These goals, objectives, and activities became a way for educators from rural elementary schools to urban universities, and for students of all ages, to stretch themselves with new ideas, resources, tools, and opportunities.

The external (Second Tier) evaluation team for this project visited South Dakota in April, 2003, and by interviewing many of the educators involved with the Star Schools project, came away with an overall picture of its history, present, and future. This report is intended to provide an overview of many of the grant activities, describe several that are especially notable, identify the few areas of weakness noted by the evaluation team, and provide broad recommendations based on the information gathered. It should be noted that, while the team spent several days visiting DDN sites and interviewing a large number of educators, it is inevitable that some parts of the initiative will be slighted, or ignored entirely. This is in no way a reflection on those activities or individuals, but is simply the reality of a finite period of time in which to gather data.

Early on in the implementation of the SDADE, the idea that "technology doesn't have a stopping point" (courtesy of the former governor) was adopted and served as a mantra for integrating the distance education initiatives as the next logical step in developing South Dakota's economic, social, and educational opportunities. In this case, technology may not have a stopping point, but the starting point for many communities involved with the DDN resembles the phenomenon known as the "adoption and diffusion of innovations," a process that includes a series of predictable events, as new ideas or practices are disseminated throughout a group. This report has three sections, with the first section discussing various grant activities that mimic (roughly) the phases of the adoption and diffusion sequence. The second and third sections include discussions of particularly notable activities and the team's recommendations, respectively.

### Adoption and Diffusion of the Digital Dakota Network

#### Awareness and Acceptance

<u>Statewide Recognition</u>

Several activities to increase "name recognition" of the DDN were implemented during the past two years, including a videotape, Website, news releases, and posters. The original proposal called for brochures and pamphlets, and a full marketing plan was developed by the Governor's office of Economic Development, but these activities were not approved at the state level.

The videotape consists of six separate programs, totaling fifty minutes. Individual program topics include a system overview, equipment operations, assessment (tied to state K-12 standards), instructional design, online teaching strategies, and the Star Schools project. The

brief video programs are concise and contain useful information, and are clearly intended for stand-alone use, as needed.

The TIE (Technology and Innovations in Education) Conference in April included several presentations specifically about the DDN or related SDADE activities. Because this conference is well attended by educators from across South Dakota, this was a wonderful opportunity to spread the word about the project while recognizing the innovative educators who are utilizing it in meaningful ways. In addition, a system demonstration of the V-TEL units was scheduled during the conference (and took place in the exhibit hall) for educators who may not have had an opportunity to view the technology in action.

Training Activities

A series of professional development activities, including sessions specifically about using the DDN effectively, were implemented in 2002 and the spring of 2003. These "short courses" not only provided teachers with information about teaching with distance education technologies, but they modeled the use of such systems for content delivery. Because a wide variety of teleconferences and workshops were offered, teachers could not only find at least one event of interest, but could also see that the technology "worked" for many different curricular and disciplinary areas. Because these videoconferences and workshops were led by educators (as opposed to "techie types") they were also an excellent way to demonstrate the flexibility of the network for teaching. Finally, by providing access to and promoting these sessions, the SDADE increased awareness of the network and its capabilities throughout the state.

Development and Preparation

Workshops at Universities

A series of workshops were conducted at five public universities (Black Hills State University, Dakota State University, Northern State University, South Dakota State University, and the University of South Dakota) during the 2002-03 academic year. Topics for these one-day events included instructional design, organizational issues, and assessing student learning for distance education, and faculty participants represented varying levels of proficiency with instructional technology. Response to the workshops was somewhat positive, but mostly lukewarm or, in the case of one institution, semi-hostile. The negative reactions appeared to stem partly from a perceived lack of recognition, by workshop presenters, of what the participants already knew. Overall, however, the instruction at these events appeared to be well organized and presented by highly qualified individuals, and the negative response can probably be attributed, at least in part, to faculty time constraints and on "political" issues related to the role of the DDN within the state higher education system.

Standardized Classroom Design

Projects identified as "top down" often carry a stigma that suggests a lack of understanding of local needs. However, in the case of this project, the centralized management of its many activities led to many positive outcomes, including the standardization of designs for distance education classrooms. DDN rooms were planned with a uniform set of components, arranged to facilitate a variety of teaching strategies. The value of such a model is that teachers (presenters, facilitators) are able to use any room in the network without additional training or redesign of instructional materials, and can safely assume that they'll have the same capabilities in every

DDN site. Additionally, deciding on a standard set of components enables costs for maintenance, replacement, training, and support to remain low.

Clearinghouse Activities/Resources

The distance education clearinghouse can be found at http://www.state.sd.us/deca/distancelearning/. This site provides educators with the opportunity to post and identify courses and special events being offered by DECA and districts. A review of the current special events and projects offered indicates that districts are taking the initiative to provide distance learning opportunities instead of relying solely on DECA to provide education offerings.

The clearinghouse is only one of the many resources available to educators on the DDN4Learning website. The thematic WebPages provide an extensive list of web resources for teaching almost any topic and the curriculum lesson plan pages offer quality instructional resources tied to the SD goals and benchmarks. This site is truly for and by educators. Educators are encouraged to not only use but to share quality instructional models. This site supports both practicing and pre-service teachers and is to be commended for its organization and content.

Support from Curriculum Technology Specialists

Repeatedly we heard from grant recipients that the support of the Curriculum Tech Specialists was crucial to the success of their projects. These individuals gave 110% of their time and effort to supporting the distance learning activities in South Dakota. Though this is only a part of their job, their availability and expertise were highly valued by individuals undertaking the delivery of full courses or special events using the DDN. Their backgrounds in teaching gave them credibility when working with SD educators. It is apparent that the Curriculum Tech Specialists and others in the DECA office were crucial players in the success of this project.

Implementation

Special Events

From conversations with the curriculum tech specialists, the original special events were identified and offered by the project team. These served as models for local educators and districts to begin offering special events. To support this effort, contracts were awarded to educators for the development of model special events projects and curriculum. During 2002-2003, 14 projects were funded. The two developers we met were already innovators and doing special projects in their classrooms. This funding support allowed them to connect in ways not possible before. This allowed others to participate via distance education and dramatically expanded the outreach of these exceptional educators. The enthusiasm of these educators was evident. From their comments, these projects directly impacted students' enthusiasm, curiosity, and motivation to learn. Collaborative opportunities were great and audio was an essential component, generating student responses such as, "Seeing them is cool but talking with them is awesome!!!"

Concerns were raised in regards to the compensation and recognition of the extra work that coordinating special events puts on educators. This was not so much a dollar and cents issue but a need to look to alternative ways to compensate and recognize outstanding educators. Another

concern is how to take this to the next level. Those participating are already working "outside of the box". They are the ones that no matter how busy, they will take on something new and do it well. For this to be successful, others need to pick up some of the load.

Role of Project Staff

The role of project staff was key in the implementation of this project, and the evaluation team was impressed with how much was accomplished with such a small number of individuals dedicated (in full or part) to these activities. The technology office was able to hire curriculum technology specialists but allocation to this specific project was only a small percent of their job. They had to deal with the political situation of the state, top down directives, and inadequate staffing and yet through their commitment and dedication they were able to act as change agents in the successful implementation of this project. Throughout the course of the evaluation visit, it became apparent that the SDADE staff functioned like a search engine for South Dakota educators -- by collecting, organizing, and distributing useful resources to teachers.

In addition, the placement of DDN staff within the DECA office was a "good new – bad news" proposition, in many ways. The less-positive aspects of being part of a governmental office were, not surprisingly, tied to the red tape of paperwork that required multiple signatures or activities that had to be approved at several levels within the bureaucracy. These less-than-streamlined procedures, however, were balanced by the stability of an already-established reporting structure, the opportunity to purchase items and services from state contracts, and the "credibility value" inherent in overseeing a project considered a priority in the state's highest office.

Configuration of and Technical Support for the Digital Dakota Network

The DDN is comprised of over 275 V-Tel compressed videoconferencing systems that were originally donated to the state by Quest Communications. Fifty of those 275 videoconferencing systems are used for state government and higher education applications, while the balance (225 compressed videoconferencing systems) are in use for K-12 educational purposes. Twelve schools had their compressed videoconferencing systems removed, because they did not use them and those systems were sent to alternative locations within the state. While it is unfortunate that those schools hadn't taken advantage of their videoconferencing system, approximately 95% of the other locations did successfully embrace the DDN and incorporated this unique technology into their school environments.

The DDN receives technical support services from its two technical hub locations in South Dakota. The first location is from Mitchell Technical Institute in Mitchell, South Dakota and the second support location is Pierre, South Dakota. The Pierre location provides scheduling and technical support primarily for government and ad hoc scheduling, while the Mitchell facility provides scheduling and technical support primarily for the K-12 and higher education locations. Each location is equipped with support staff and approximately four to six conferencing bridges. These support facilities schedule and rotate technical support operations. Additionally, by having two separate locations, South Dakota has redundant technical support services for the DDN.

Usage of the network has grown steadily and the importance of technical support cannot be overemphasized. If the DDN, through neglect, is eventually perceived as an unreliable resource,

it will cease to be used for anything other than fringe activities, rather than functioning as an integral part of a school's instructional program. The evaluation team would encourage the state's budget officials to continue funding these tech support functions. In addition, while the decision to remove systems from schools where they had not yet been used may reflect the need for efficiency, from an adoption and diffusion perspective, this is a mistake. Making it impossible for a school to use this resource is not a good way to encourage them to adopt the technology. The students in these areas lose out and it would make more sense, ultimately, to determine why a system hadn't been utilized and rectify the "real" problem. [Note: This decision to remove V-Tel units was not made by SDADE staff, and it is clear that they are in agreement with the evaluators' recommendation on this issue.]

Evaluation and Revision

Action Research Projects

A total of nine action research projects were funded and results published in the *Encyclopedia of Research on Distance Education in South Dakota.* Researchers represented Higher Education (3), High School (2), K-12 (2), Middle School (1), and a joint project between Elementary and Higher Education (1). Results were shared in print and researchers made presentations at the state TIE conference. As a result of participating in this action research project, several of the researchers decided to acquire advanced degrees. These funded projects provided documentation of the change process and adoption of distance education in the state of South Dakota. In addition, participants recognized the value of doing and sharing research and how action research supports the practicing teacher.

Some of the insights and results shared by these researchers included:

- The majority of schools actively using the DDN are participating in regional consortia.
- The development of a consortium requires a change in systems and most notably a change in administrators' attitudes.
- Distance learning broadens the possibilities for both students and educators.
- One researcher described the state's situation as, "Small schools are using it, large schools don't need it, and middle-size schools are lost in the middle."

These point to some of the variables that the technology office will continue to deal with to successfully integrate distance education in SD schools. Although research and publishing, as project activities, were not high priorities, the action research grants provided opportunities for those involved to network with their colleagues across the state, re-examine their professional goals, try out new instructional strategies, gain national recognition, and make contributions to the growing body of distance education research.

Site Visits

The use of site visits to DDN schools throughout the state may have served to promote awareness of the SDADE, but the original purpose of these many trips is unclear. It appears that the internal evaluators had not developed a standard set of questions to ask during their visits, nor that the administrators, teachers, or students participating in the discussions understood why they were being interviewed. These visits might have offered insight regarding how the project could be improved; unfortunately, the information was very general and the data were not sent to

the SDADE staff in a timely manner, reducing the potential usage of the documentation to that of an historical status report. Additionally, it is not clear why so many schools were included in the visits, rather than selecting a small, representative sample. Overall, the site visits activity provided an interesting series of snapshots of how the system was being utilized (or not), but the potential benefit of the visits was never fully realized.

Communication Between Evaluators and SDADE Staff

As the Second Tier evaluation team gathered information about this project, it became increasingly obvious that there had been significant communication problems between the First Tier Evaluation team and the SDADE staff. The genesis of these problems is unclear, but the resulting "disconnect" diminished the potential benefit of the various internal evaluation activities. With more extensive and precise communication among these individuals, the data being gathered could have served as useful formative feedback. The evaluation team suggests that future projects include clearly delineated roles for all evaluators, including how data gathered will be reported and to whom.

## Special Notice

Two activities that the evaluation team learned of were especially noteworthy, and these are described below. These projects have been singled out as exemplary, but the evaluators feel confident that there are other equally deserving activities that the team members simply were unable to fully appreciate due to time constraints.

### U.S.D.A. Forest Service Involvement

The project undertaken by the Forest Service office in Rapid City was a notable example of how the DDN can be used to extend educational activities beyond the limitations imposed by geography. These educational programs on Fire and Ecology, developed and presented by two Black Hills National Forest Rangers, involved groups of middle school students in learning activities that integrated information presentation, video clips, an engaging series of live demonstrations, and student participation. The potential for this type of programming to involve a large number of students, not only across South Dakota but also by reaching out to other states, is a powerful reminder of the possibilities inherent in technologies that connect teachers (whatever they may be called and wherever they are found) with learners.

This project is also notable in that the Rangers took on these activities in addition to their regular, full-time job duties. This willingness to do more than the minimum (seen in many of the SDADE projects) shows the degree of integration and acceptance that the DDN has had across the state. Putting DDN units at other non-school sites, such as Mount Rushmore, Washington Pavilion, Crazy Horse Memorial, and the Cultural Heritage Center was a good idea, and it is strongly suggested that SDADE explore the many possibilities this affords.

### Themes

The thematic WebPages that were developed by teachers were a successful part of the implementation process, and one that could serve as a model for other distance education

projects. The sites were developed around themes (related to curricular subjects) and aligned with standards. The sites did not provide curriculum but served as an organized "hotlist" of links for teachers and students to use. Teachers were enthusiastic about developing the thematic pages but felt a need to be kept more informed. "We don't know what else is happening [with the thematic Web sites] but just a hit count would be nice!" was one individual's feeling. Developers reported that the students were excited about the sites, and they felt that this translated into higher quality work in student projects.

## Recommendations

The evaluation team has generated four major recommendations for this project. (Additional suggestions for the enhancement of specific activities have been discussed in prior sections of this document.) These are based on observations of current distance education activities in South Dakota, knowledge of other distance education projects across the United States, and trends in pedagogy and advancing technologies. The recommendations are: 1) to secure additional funding to continue the programs begun by the Star Schools grant; 2) to establish stronger relationships between the SDADE staff and the faculty at the postsecondary level; 3) to explore the options for greater involvement with other Star Schools programs; and 4) to disseminate the results of the DDN activities beyond South Dakota.

Securing additional funding is an ongoing process, and one that the SDADE staff members have been involved with. However, this activity needs to become a priority if the valuable programs begun with the assistance of the Star Schools grant are to grow and be diffused throughout the state. One suggestion for this is to identify "high interest" funding opportunities (those initiatives that appeal to a specific governmental agency, private foundation, or other source) such as activities aimed at underserved populations. The projects and programs of the SDADE offer the potential to provide a variety of educational opportunities (the special projects discussed earlier, for example) for populations not yet involved with the DDN.

One concern that became evident during the evaluators' visit was the apparent fragility of the relationships between SDADE staff and individuals at the postsecondary level. Although a series of workshops was offered at the postsecondary institutions, the response to these was predominantly lukewarm. It appeared that the most successful postsecondary activities were those initiated and developed between a limited a number of individuals, rather than group-based or administratively mandated events. One suggestion, then, is to cultivate a cadre of opinion leaders at these schools who can be relied on to promote, on a person-to-person basis, the potential of the DDN.

Additionally, the coursework that was offered by postsecondary schools appeared to be focused on how to make "traditional" courses fit into the new delivery medium. Our suggestion is that rather than attempting to pound the round pegs of face-to-face instruction into the square holes of the DDN, an effort be made to exploit the capabilities of the network for optimal learning and to develop instruction that takes advantage of capabilities not previously available in time- and place-bound face-to-face coursework. Again, personal contact with "system champions" who have established credibility at the postsecondary level (e.g., faculty who've created and

successfully implemented innovative instruction) would be an excellent resource for disseminating what is known about successful online teaching strategies.

The federal Star Schools program has funded an extensive network of school and statewide projects, with representatives from these projects involved in a wide variety of activities. These individuals can serve as a valuable source of support and innovative ideas, and each project (since the beginning of the Star Schools initiative in the mid-1990s) has produced a treasure trove of resources. In addition, regular meetings of these program participants offer a wealth of ideas for promoting system use, encouraging innovation, and disseminating information about project successes. It is strongly recommended that the SDADE staff become more involved in these activities, as a way to learn from other programs, as well as to share their expertise outside of South Dakota.

As a related recommendation, the evaluation team suggests that the results of the Action Research Projects be shared beyond the borders of South Dakota at regional, national, and international conferences. A one-time meeting ("Interstate Connections") to initiate conversation on the potential of sharing resources among several states (South Dakota, Nebraska, Iowa, North Dakota, and Wyoming) was hosted by the SDADE, but the long-term outcomes of that event are unclear. The consequences of such networking can be far-reaching and benefit the state, as well as those who learn of these research projects. Additionally, information about the DDN4Learning Website should be disseminated to K-12 educators and teacher education programs. This is a great resource that deserves to receive national recognition.

## Summary

In summary, this project was well organized and professionally implemented, with the highest priority given to the learning opportunities that the system presented and how to best make those available to the residents of South Dakota. The original activities proposed were wisely extended beyond the initial one-year timeline, based on a realistic assessment of staff resources and procedural limitations. This also allowed time for educators to reflect on how they could take advantage of the new possibilities that this system offered, and to prepare for courses, special events, and research activities related to the DDN.

Overall, the Second Tier evaluation team felt that much had been accomplished in a fiscally prudent manner and with a high degree of buy-in from the state's educators. The few weaknesses identified are "resolvable" issues and don't present major obstacles for the continued success of the project. Our hope is that the many positive outcomes of this project make their way into the literature to benefit others beyond South Dakota's borders.

## PART VII - SUMMARY AND RESULTS OF THE EVALUATION OF THE SOUTH DAKOTA ALLINACE FOR DISTANCE EDUCAITON

### The AEIOU Approach

The final and summary evaluation statements offered by the team of evaluators that examined the South Dakota Alliance for Distance Education are organized around the five-part AEIOU approach. These observations are derived from the many and varied activities of the evaluation team over a multi-year time frame.

**Accountability -** Did those involved in implementing the SDADE project do what they said they were going to do?

Undoubtedly, the majority of the goals, objectives, and activities of the SDADE project were accomplished. Data collected by evaluators clearly indicate that most of what were identified as activities in the original SDADE proposal that was the blueprint for the resulting SDADE project were accomplished. For these activities those responsible for the SDADE project were accountable.

However, there were two categories of activities for which accountability data were not available. First, several activities have been deferred and were not completed at the time of writing this final evaluation report (Appendix C). These activities are continuing and will require follow-up evaluation to insure that they are satisfactorily completed.

Second, several activities have been modified slightly. It is expected that changes will be necessary in relatively lengthy and large projects such as the SDADE. Goals, objectives and activities are written and subsequent events may require that these plans be changed and some even deleted. Project management has explained modifications and informed the U.S. Department of Education.

In summary, the majority of the activities of the SDADE have been satisfactorily completed. Project management has indicated that other activities will soon be completed and evaluated.

**Effectiveness** – How well was the SDADE project implemented?

Undoubtedly, the tasks accomplished by those involved with the SDADE project were well done, of high quality, and relevant to the needs of South Dakota educators. Of special note are the thematic units, the research projects, and the web pages because they were planned and produced by South Dakota teachers. For example, the nine action researchers produced relatively high quality and needed research dealing with issues of local and personal importance. In seven of the nine studies, this research was the first attempt at rigorously examining an issue using a theoretical foundation and following generally accepted methodologies. In several cases, these teachers have decided to pursue advanced degrees and to build on the skills they developed during the action research process.

Other high quality activities included the training videos and workshops for teacher education faculty. Of note were the workshops, which initially were not well received but which were revised and improved so that in subsequent offerings they were considered outstanding by participants, instructors and evaluators (Interim Report, June 2002).

It was apparent to evaluators that SDADE leaders expected and received outstanding and high quality work from those involved in the project. Also, evaluators met with teachers, videographers, trainers, and others during the project, so it was well known to all that efforts were being evaluated. Active involvement by evaluators seemed to contribute to effectiveness.

**Impact** – Did the SDADE project make a difference?

Impact is by far the most difficult category of evaluation to positively identify, especially for projects such as the SDADE. A careful and objective review of quantitative and qualitative data seem to indicate that the SDADE project has had marginal impact on the diffusion of distance education in South Dakota. Certainly, for the hundreds of South Dakota educators participating in some component of the project there was a positive impact. Units were developed, www pages were constructed, research was published, videos were produced, and training was conducted, and by any index, these efforts were of high quality. Less obvious was the general, or over-riding impact of the SDADE, especially since a number of other distance education initiatives were in progress concurrently with the SDADE project.

It is recommended that relevant activities begun as part of the SDADE be continued, and that continuing efforts be made by the South Dakota Department of Education to assist schools and teachers who wish to adopt distance education. Teachers report a high degree of receptivity to this innovation, but indicate that they need continued support through training and incentives. Distance education generally, and the DDN specifically, have had impact, but not to the extent hoped. More distance education activities by the Department of Education technology team are needed.

**Organizational Context** – What structures, policies, or events in South Dakota helped or hindered the SDADE project?

Collectively, the evaluation team members have participated in dozens of large-scale grant projects. The SDADE was one of the few with such a small number of permanent staff hired to manage it. Some consider this to be a positive since resources were available to fund other SDADE projects and activities, and some might conclude that SDADE efforts were diluted because they were not the single responsibilities of a permanent staff.

Also of note is the close relationship of the SDADE activities to the political initiatives of the governor of South Dakota. Distance education and the Digital Dakota Network were major initiatives of the governor. He and his supporters undoubtedly influenced the activities of the SDADE. The evaluation team discussed this situation a number of times, and in this case it was a positive and supportive situation. In other situations and in other states the involvement of elected officers with political agendas may not be optimal for funded proposals that have clearly identified goals, objectives and activities.

It is important to note that the diligence of the SDADE principal investigator was obvious to the evaluation team. Her involvement insured that the SDADE project was of high quality and of maximum impact. This is to be commended.

**Unanticipated Consequences** – What changes or consequences of importance happened as a result of the SDADE project that were not anticipated?

Most evaluators relish the opportunity to observe and comment on events that occur in projects such as the SDADE that were not anticipated. This is the case for the SDADE. Three interesting consequences are worthy of note. First, a number of new professionals were given the opportunity to become leaders and to exercise considerable latitude in the development of an important and far-reaching project. A number of persons at the South Dakota Department of Education, at pubic universities, and in schools were given the opportunity to demonstrate their industry and insights about how education in South Dakota in the future might be better practiced. These persons will most likely continue to play leadership roles in the education community in the State.

Second, a nation-wide, even international, network of colleagues has been developed because of the activities of the SDADE. Project staff have presented by invitation at a number of national conferences and in two instances at international events. People make projects successful, and people with a broad range of experiences and professional relationships are more likely to be able to continue the process of educational innovation. South Dakota is blessed with a larger number of such individuals.

Finally, South Dakota has a national reputation. It is recognized as a leader in distance education and in the diffusion of innovations using teachers as the primary change agents in this process. The model of diffusion followed both by design and by chance in South Dakota is a model for other states and regions. They have implemented a successful innovation – distance education – in the state and the process they followed is a case study for the theory of diffusion of innovations described by Rogers (1995). Other organizations should study the model used in South Dakota.

## Summary

In summary, the major concern identified by this evaluation report deals with activity completion. Unfinished activities should be completed. This concern is considered to be of small consequence.

On the other hand, those activities that the SDADE has completed were evaluated as being effective, having marginal impact in the short term but with the potential if continued to have significant and positive impact on education in South Dakota. Finally, the SDADE is a model for other states, regions, and organizations to follow if they wish to diffuse distance education effectively.

*"...the farmer does not look down at the ground but at the end of the field to plow straight rows."* Old Midwestern Saying

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# APPENDIX A – SDADE GOALS, OBJECTIVES AND ACTIVITIES

Goal #1: Education using the Digital Dakota Network will be UNDERSTOOD and ACCEPTED by South Dakotans.

Objective 1.1: Familiarize South Dakotans with the DDN

Objective 1.2: Inform educators about the effectiveness of distance education

Objective 1.3: Familiarize parents and students with the concept of distance education and the potential benefits of this approach.

Objective 1.4: Provide increased access to the DDN to school and community groups for meetings, conferences, and other community-based activities.

Activities:

- Produce a promotional program on South Dakota Public Television dealing with the Digital Dakota Network (DDN) and distance education in South Dakota.
- Produce and distribute pamphlets and brochures dealing with the South Dakota Distance Education Alliance: South Dakota's Star Schools Project (SDADE), the DDN, and distance education.
- Plan and deliver statewide and regional town meetings dealing with the DDN and distance education.
- Plan and offer abbreviated Distance Teaching and Learning Academies (DTLs) for school board members, parent-teacher groups, and other community members.
- Produce and distribute news releases and other promotional materials dealing with distance education activities in South Dakota.
- Install a number of DDN classrooms in community centers, such as libraries and other public buildings.

Goal #2: South Dakota educators will be PREPARED and SUPPORTED so they can effectively teach students at a distance.

Objective 2.1: Develop curriculum materials for teacher education programs so preservice teachers are prepared to teach students at a distance.

Objective 2.2: Provide inservice and staff development to South Dakota teachers and administrators about teaching and managing in a distance education system.

Objective 2.3: Provide inservice and staff development for South Dakota teachers and administrators dealing with innovative teaching strategies using technology.

Objective 2.4: Provide teachers and school districts with support to assist them in using the DDN.

Objective 2.5: Develop training materials that can be used to prepare educators, community members, and other stakeholders to use the DDN effectively for education, community development, and workforce growth.

Activities:

- Install a DDN classroom in facilities of each of South Dakota's public university teacher education programs.
- Offer special DTL Academies for the teacher education faculty in South Dakota.
- Produce a model "distance education foundations" course for teacher education undergraduate and graduate students that focus on distance education in South Dakota.
- Implement a DDN "Teacher on Television" program to showcase K-12 teaching using the DDN.

- Offer mini grants to schools and teachers to modify the local curriculum for teaching over the DDN.
- Produce training videos for preservice, inservice, and stakeholder use, especially for individuals using the DDN.
- Plan and implement a conference or track of an existing state conference dealing with distance education in South Dakota.

Goal #3: South Dakota schools will be CONNECTED to the DDN.

Objective 3.1: Identify schools in each of South Dakota's school districts to have additional classrooms equipped and connected to the DDN.

Objective 3.2: Link schools and teachers to on-line resources using the DDN.

Objective 3.3: Provide assistance to schools in order for them to connect to the DDN.

Activities:

- Develop several "alternative" classroom designs for DDN classrooms and equip several model classrooms using these designs.
- Develop a plan for equipping a DDN classroom in each school *building* in South Dakota that does not have a DDN classroom, and equip as many additional classrooms as possible.
- Provide school districts with mini grants to expand their telecommunications infrastructure.
- Develop a clearinghouse for curriculum units and modules developed in South Dakota for South Dakota teachers.

Goal #4: Instruction will be OFFERED and access to instruction INCREASED using the DDN, especially in needed subjects such as mathematics, sciences, foreign languages, and literacy.

Objective 4.1: Offer courses so they can be easily infused into the curriculum, with special attention to state standards and national published reform guidelines.

Objective 4.2: Attract traditionally underserved groups to courses and experiences in mathematics, sciences, foreign languages, and literacy.

Objective 4.3: Develop exemplary curriculum experiences, units, and courses that can be used and that serve as models.

Objective 4.4: Develop assessment procedures for use with distant learners.

Activities:

- Offer a number of grants for partnerships of South Dakota teachers to develop and offer exemplary curriculum units using the DDN.
- Explore and develop partnerships with private sector organizations to enhance curriculum offerings in South Dakota, especially with national organizations that offer distance education curriculum units and modules and innovative approaches for teaching and learning at a distance.
- Develop links with other states that offer courses at a distance via two-way telecommunications networks.
- Offer mini grants to teacher groups for the development of exemplary assessment strategies for distance education courses and experiences.
- Develop formal strategies for course sharing by schools and districts using the DDN.

Goal #5: A program of RESEARCH and EVALUATION will be established to document the impact and effectiveness of the DDN and the distance education efforts underway in South Dakota.

Objective 5.1: Conduct scientifically appropriate studies on the diffusion of the innovation

of distance education.

Objective 5.2: Evaluate the teaching and learning activities using the DDN, with special emphasis on accountability, effectiveness, impact, organizational context, and unanticipated outcomes.

Objective 5.3: Communicate the activities of the project, with special emphasis on the dissemination of the results of research and evaluation efforts.

Activities:

- Offer action research grants to South Dakota teachers that deal with use of the DDN and the implementation of distance education, and collect research papers and publish them.
- Collect comprehensive, statewide baseline, formative, and summative evaluation data about the SDADE, the DDN, and distance education, and submit reports as required by the US Department of Education, and as needed by SDADE project leaders.
- Conduct needs assessment activities to identify future activities to be addressed using the DDN and distance education.
- Publish the results of evaluation and research activities conducted in South Dakota, including research monographs, guides for successful teaching at a distance, videos on the South Dakota approach to distance education, and reports on the results of the SDADE's activities.
- Collect data to develop and publish a technology profile on South Dakota education.
- Present at professional conferences about distance education in South Dakota.

Goal #6: Manage the South Dakota Star Schools Project

Objective 6.1: Hire a project director and staff.

Objective 6.2: Develop an advisory "Partners' Board."

Objective 6.3: Identify a fiscal agent

Objective 6.4: Establish a star schools project office – physical and virtual.

Activities:

- Hire SDADE staff and establish an SDADE office.
- Develop a comprehensive SDADE WWW presence.
- Identify intra- and inter- state partners to the SDADE.
- Manage the SDADE budget, disburse funds, and submit financial reports and required and requested.
- Seek additional and continued funding for the SDADE.
- Develop relationships with other Star Schools projects, nationwide.
- Identify additional activities for the SDADE.

# APPENDIX B – SDADE EVALUATION MATRIX

## Introduction

Distance Education in South Dakota has a long and rich history. Structures and events of distance education have included a network infrastructure that has wide area wired every K-12 school in the state. Every high school in the state is connected to the Digital Dakota Network (DDN), South Dakota's statewide data and video network. South Dakota has entered into partnership with many other institutions to ensure the quality of the use and delivery of distance education in the state. This commitment to distance education systems continues.

## Evaluation Purpose

The purpose of this evaluation was to determine if the activities of the SDADE were completed in an accountable way. Also the effectiveness and impact of the SDADE were evaluation. Finally, unanticipated consequences and the organization context within which the project operated were evaluated.

## Approach and Audience

The evaluation was both formative and summative, encouraging stakeholder participation in the sense making of evaluative data. The evaluation used the A, E, I, O, U approach – Accountability, Effectiveness, Impact, Oganizational context, and Unanticipated outcomes

The primary client for the evaluation is the South Dakota Department of Education.

## Evaluation Planning

The evaluation matrix below identifies each of the objectives of the South Dakota Alliance of Distance Education (SDADE) with the key questions related to that objective. Each of these questions correspond to the A, E, I, O, U evaluation model. The data collection methods and analyses procedures are also identified. This plan was the blueprint for evaluators.

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
|---|---|---|---|---|---|
| 1.1<br>A<br><br>Produce a promotional Program on SD Public TV | A,E) In what ways did the SDADE personnel and SDPTV conform to their video development process?<br>I) In what ways were the intended audiences of the video program impacted?<br>• How did target audiences respond to information?<br>• What are the perceptions and concerns of viewers relative to the DDN and DE in S.D.?<br>• Did number of teachers attending/or registering for TTL or DTL academies increase after program aired?<br>• Did number of classes offered via DE increase in public, private K-12 and higher education?<br>• Did number of students taking DE classes increase in K-12 or higher education?<br>• Did community or business groups express increased interest in using the DDN?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the video development project in accomplishing its goals? | Background – review existing literature on history on DDN and DE in SD. (A one-page synopsis as a product.)<br><br>Interview 1.0 – SDADE Personnel to gather additional background.<br><br>Interview 1.1 SDPTV<br><br>Document Review – of the development process and of the design criteria<br>Observe<br>Formative evaluation: Collect longitudinal data at the beginning, middle and end.<br><br>Interviews with key personnel<br><br>Possible focus groups with students, faculty, community groups?<br><br>Possible survey asking for narrative information | Event histo-map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts.<br><br>Develop a rubric to be used for analyzing all videos produced. | Beginning of script until air time and response to video | Determine when production of program is started.<br><br>SDADE<br><br>Study script.<br><br>Collect times program aired.<br><br>Determine who might have seen the program.<br><br>SDTV is information source |
| 1.1<br>B<br><br>Produce and distribute pamphlets and brochures | A) What pamphlets and brochures dealing with SDADE, DDN, and distance education were produced? Who participated in the development of these products?<br>E) How were pamphlets and brochures distributed?<br>I) How did target audiences respond to the pamphlets and brochures?<br>O) What awareness to distance education (DE) services and products did pamphlets and brochures make?<br>U) What unanticipated events resulted from the distribution of pamphlets and brochures? | Content Review of products (artifacts)<br><br>Interview responsible personnel<br><br>Distribution lists and feedback.<br>Distribution timeline and DDN schedule. | Interview(s) data from personnel will be analyzed to determine development and dissemination structures<br>Analyses of distribution lists and feedback will focus on breadth and depth of dissemination.<br>Review of distribution timeline and the DDN schedule will be made to track usage. | 11/19 Interview project personnel<br>11/26-30 Collect and review relevant products and distribution lists.<br>12/10-14 Collect and review DDN schedule. | |
| 1.1<br>C<br><br>Produce and distribute news releases and other promotional material | A) What news releases and other promotional materials dealing with DE activities in South Dakota were produced? Who participated in the development of these products?<br>E) How and to whom were news releases and other promotional materials distributed?<br>I) How did target audiences respond to news releases and other promotional materials?<br>O) What awareness to (DE) | Content review of products (artifacts)<br><br>Interview responsible personnel<br><br>Distribution lists<br><br>Secondary review of feedback from producers, promoters, etc. | Interview(s) data from personnel will be analyzed to determine development and dissemination structures.<br><br>Analyses of distribution lists will focus on breadth and depth of dissemination<br><br>Feedback data will be analyzed for audience | 11/19 Interview personnel<br>11/26-30 Review relevant products and distribution lists | SDADE project management<br><br>Resource Requirements<br>Cooperation personnel and DECA SDADE project management. |

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| | services and products did pamphlets and brochures make?<br>U) What unanticipated outcomes resulted from this information distribution? | | perceptions and response to product(s) themes. | | |
| 1.2<br>A<br><br>Produce a series of videos to explain the potential of DE | A, E) In what ways did the SDADE personnel and SDPTV/NOVA conform to their video development process?<br>I) In what ways were the intended audiences of the video program impacted?<br>How many videos were produced and what was the focus of each?<br>How did target audiences respond to information?<br>What are the perceptions and concerns of viewers relative to the DDN and DE in S.D.<br>Did number of teachers attending/registering for TTL or DTL academies increase after program aired?<br>Did number of classes offered via DE increase in public, private K-12 and higher ed?<br>Did number of students taking DE classes increase in K-12 or higher education?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the video development project in accomplishing its goals? | Interview 1.0 – SDADE Personnel to gather additional background.<br><br>Interview 1.1 – SDPT<br><br>Document Review – of the development process and of the design criteria<br><br>Review scripts<br><br>Review videos<br><br>Possible focus groups with students, faculty, community groups? | Event histo-map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts. Develop a rubric to be used for analyzing all videos produced. | Beginning of script<br><br>Review production of video | Nova South Eastern University SDPTV |
| 1.2<br>B<br><br>Contribute to existing online news letters | A) What contributions have been made in relevant publications about SD distance education?<br>E) How broad do these publications reach?<br>I) How do target audiences respond to the information?<br>O) What organizational barriers or aids arose in the development and distribution of the literature?<br>U) What unanticipated events resulted from the distribution of the literature? | Periodical survey<br><br>Author interviews<br><br>Reader responses to publisher<br><br>Reader interviews | On-line and print periodicals serving the state will be identified and searched for relevant contributions.<br><br>Sponsors of online journals will be queried for reader feedback, which will be topically organized.<br>Author and reader interviews will be thematically analyzed. | 10/11-Identify online sources and authors.<br>10/15-Analysis of publications.<br>11/20-Completion of interviews. | Department of Education and Cultural Affairs (DECA)<br><br>Resource Requirements<br>Survey tabulation; |
| 1.3<br>A<br><br>Produce informational brochures for parents | A) In what form do informational brochures exist?<br>E) To whom were the brochures disseminated? In what fashion?<br>I) What impact did these brochures have on its target audience?<br>O) What organizational barriers or aids emerged in the development of the brochures?<br>U) What unanticipated events resulted from the development and distribution of the brochures? | Document analysis<br><br>Reader interviews<br><br>Production Audit | Brochures will be examined for content appropriateness and accuracy relevant to DDN use and distance education in SD. Indicators and reader satisfaction and brochure quality will be gained from telephone interviews of a small sample of readers. | 10/15-analyze production plans and participants.<br>12/30-complete interviews of brochure readers and the accompanying analysis. | Department of Education and Cultural Affairs (DECA)<br><br>Resource Requirements |

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| 1.4<br>A<br><br>Plan and offer abbreviated DTLs for community members | A) In what form and for whom did abbreviated Distance Teaching and Learning Academies for community learners take place?<br>E) Were participants satisfied with their academy experience?<br>I) Do participants feel prepared to use DL technologies to promote new learning experiences for themselves and others?<br>U) What new insights for both learner and trainer resulted from the abbreviated DTL Academies? | Interview DECA SDADE project management<br><br>DTL participant evaluations<br><br>DTL participant interviews<br><br>Lesson review<br><br>Document review | Interview data from DECA SDADE project management will be analyzed for planning and implementation structures.<br><br>DTL participant evaluations will be tabulated and thematically analyzed.<br><br>A sample of DDN lessons will be analyzed to document, tally, and categorize practices and themes.<br><br>A sample of DTL participants will be interviewed in conjunction with lesson plan review<br><br>Room scheduling records will be examined for usage frequency. | 11/20 Interview SDADE project management and review of planning and program documents<br>11/26-28 Survey DTL participants and tabulate results<br>2/02 Schedule interviews and lesson plan collection.<br>3/11-13/02(TBD) Lesson review and interviews completed. Record review complete. | DECA SDADE project management<br><br>Site teachers and personnel<br><br>Resource Requirements<br>*Cooperation of DECA SDADE project management and site personnel<br><br>Survey tabulation<br><br>Evaluation tabulation |
| 1.4<br>B<br><br>Produce explanatory videos on how to use DDN classrooms | A, E) In what ways did the SDADE personnel and SDPTV/Nova conform to their video development process?<br>In what ways were the intended audiences of the video program impacted?<br>A) What community groups were/are using the DDN currently?<br>E) How did target audiences respond to information?<br>I) What are the perceptions and concerns of viewers relative to the DDN and DE in S.D.?<br>I) Did the number of community groups using the DDN increase?<br>I) Were additional conferences scheduled?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the video development project in accomplishing its goals? | Interview 1.0 – SDADE Personnel to gather additional background.<br><br>Interview 1.1 – SDPTV Nova<br><br>Document Review – of the development process and of the design criteria<br><br>Review scripts<br><br>Review videos<br><br>Check use records.<br><br>Possible focus groups with students, faculty, community groups? | Event histo-map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts. Develop a rubric to be used for analyzing all videos produced. | | Find out how videos were disseminated and if they were used<br><br>Check with NSU SDPTV |
| 1.4<br>C<br><br>Install a | A) Where were DDN sites installed in locations that are educational resources for schools, teachers, and students? Are those locations accessible | Document review<br><br>DDN hardware audit | *Dedicated DDN sites will be audited for the presence of identified equipment. Room scheduling records will be | 1/15-18/02 TBD Conduct hardware audit and document review | DDN Classroom site coordinators; DECA SDADE project management; |

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| number of DDN classrooms that are education resources for schools teachers & students | for students and teachers?<br>E,I) For what purpose are the sites used?<br>O) What institutional barriers and/or organizational facilitators contributed to the installation of these DDN sites?<br>U) What unanticipated events resulted from the installation of these DDN sites? | | examined and program offerings analyzed. Themes and frequencies will be identified from the data. | | Resource Requirements<br>Cooperation of DDN classroom site coordinators; DECA SDADE project management |
| 2.1<br>A<br><br>Install a DDN class room for each SD public teacher education program | A) At what stage of completion are DDN classrooms in teacher colleges around the state?<br>E) For what purposes are DDN classrooms used?<br>I) In what ways has the DDN provided enhancement experiences and extended instructional experiences for preservice teachers?<br>O) How has the addition and use of the DDN affected College of Education curriculum and programming at respective institutions?<br>U) What unanticipated outcomes are a result of the placement and use of DDN classrooms? | DDN hardware audit<br><br>Document review<br><br>Instructor and student interview<br><br>College of Education course offering audit | Dedicated DDN rooms will be audited for the presence of appropriate equipment using SDADE specs. Room scheduling records will be examined at both the institution and central bridging locations. A sample of instructors and students will be selected for interviews. Themes and frequencies will be identified from the data. | TBD-Site visits to institutions (coordinate with the evaluation of COE faculty development activities conducted by NSE).<br>11/30-Review of scheduling documents completed.<br>12/10-Final phone/ video interviews. | Higher Education Institutions; State central video bridging facility (MTI).<br><br>Resource Requirements |
| 2.1<br>B<br><br>Offer special DDN Academies for teacher education | A) In what stage of planning, development, or delivery are education faculty DTL's?<br>E) How did participants perceive the effectiveness of these events?<br>I) How did/does training affect the practice and attitudes of faculty toward distance education?<br>O) How did/does the college or institutional contexts affect the delivery and receipt of development?<br>U) What unanticipated outcomes are results of the training? | Attendance records<br><br>Event observation<br><br>Participant interviews and focus group<br><br>Participant survey | Attendance records will be audited to determine levels of faculty participation at each institution.<br><br>Survey data will be tabulated and interview and focus group data will be thematically analyzed. | Sept. 12-Identify training dates.<br>Dec. 5-Complete site visits and collection of data at sites. | Nova Southeastern University Trainers; Faculty participants<br><br>Resource Requirements<br>College of Education Dean to gain access to development events |
| 2.1<br>C<br><br>Produce model DE foundations courses for teacher education undergrad courses | A) In what stage of planning, development, or delivery are graduate and undergraduate "foundations"distance courses?<br>E) Is the content of these courses appropriate?<br>I) How do students perceive the effectiveness of courses?<br>I) What results have the courses had in encouraging and helping student integrate DE enhanced curricular activities?<br>O) What factors within the COE's or their institutions helped or hindered the development of DE Foundations courses?<br>U) What new institutional changes are developed and delivered DE Foundations courses responsible for? | Expert panel syllabus review<br><br>Student course evaluations<br><br>Analysis of student teacher lesson plans<br><br>Student and teacher interviews | Using the expertise of a team (3) of external reviews, DE foundations course Syllabi will be evaluated for their scope and sequencing of content. Student course evaluations will be statistically tabulated and represented in the aggregate by institution. Evaluators will examine student lesson plans for their ability to integrate DE supported experiences—the examination will be summarized according to strengths and weaknesses. Interviews will be thematically tabulated. | 9/15-Complete analysis of each college's course development proposals<br>10/15-Conduct syllabus review<br>12/15-Conduct student and teacher interviews<br>1/15/02-Complete analysis of student lesson plans | College of education Deans or designees; Course instructors and their students;<br><br>Resource Requirements<br>Independent expertise to serve on syllabus review panel; |
| 2.2 | A) What conference(s), held in the | Conference programs | Conference programs will | 9/24-Identify | DECA; |

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| A,B<br><br>Plan and implement a DE conference | state, deal/dealt with distance education in South Dakota?<br>E) How did the conferences address issues in DE and what were participants' perceptions of the effectiveness of the messages?<br>I) How did conference strands affect changes in the organizations sponsoring these events?<br>O) What factors contributed to the inclusion of DE strands in state and regional conferences?<br>U) What unanticipated consequences are a result of conferences in DE? | Conference evaluation forms<br><br>Organizer and participant interviews | be reviewed for strands, sessions, and keynotes addressing DE. Sub themes addressed in DE will also be identified. Conference evaluation forms will be statistically and qualitatively analyzed for some indication of affect on attitudes and knowledge of participants. Interviews with key participants will be thematically analyzed and compared against other data forms. | regional and state conference planning documents<br>10/26-Gather conference data and participant lists<br>11/30-Last date for interviews<br>12/15-Data analysis complete | Technology Innovations in Education (TIE); State K-12 and Higher Education Disciplinary associations.<br><br>Resource Requirements<br>Cooperation from conference organizers for access to conference evaluation forms; |
| 2.3<br>A<br><br>Provide in service staff development for SD teachers | A) What provisions have been made by DECA for inservice training and staff development?<br>E,I) How many schools and individuals have received this training? What have been the positive outcomes?<br>E,I) What training needs have yet to be met?<br>O) How did the schools help to facilitate the inservice training program?<br>U) What unanticipated outcomes have resulted from the inservice training? | Inspection of DECA documentation.<br><br>Focus Groups<br><br>Teacher and administrator survey (Questionnaire) | DECA staff will produce schemes of work and delivery schedules of inservice training and staff development programs. Teachers from schools and HEIs in focus groups will be invited to give personal accounts through a free form section in the questionnaire. Focus group contributions will be thematically analyzed. | Visit to SDADE office to be arranged.<br>Short questionnaire administered to Governor's 'Show Case' delegates on the final day. | Schools and Higher Education Institutions (HEIs) Department of Education and Cultural Affairs (DECA)<br><br>Resource Requirements<br>Analysis of focus group interviews.<br>Analysis of questionnaires. |
| 2.4<br>A<br><br>Offer innovation funds to schools and teachers to assist them to develop special events | A, E) In what ways did the SDADE personnel conform to their process of offering innovation funds?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the beneficiaries environment helped or hindered the innovation funds activity from accomplishing its goals?<br>I) In what ways were the intended beneficiaries of the innovation funds impacted? | Interview 2.0 – SDADE Personnel to gather additional background regarding the RFP process, selection criteria, accountability requirements, etc.<br><br>Document Review – of the "offering" process that has been developed<br><br>Interview & Survey to Collect data regarding the fidelity of the process. Interviews with key Informants regarding RFP process, benefits, impacts. | Event histo-map development.<br><br>Format ive and summative reporting on "RFP" for innovation funds.<br><br>Comparative analysis of "special event" ideal and "fit" with local curriculum. | | Project Management<br><br>Project Beneficiaries & Project Management |
| 2.5<br>A<br><br>Produce training videos for preservice, inservice & stakeholder use | A, E) In what ways did the SDADE personnel, NOVA and SDPTV conform to their training video development process?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the training video development project in accomplishing its goals?<br>I) In what ways were the intended audiences of the video training program impacted? | Interview 2.1 – SDADE Personnel to gather additional background regarding the training video production process.<br>Document Review – of the production process that has been developed<br>Interview & Survey to Collect data regarding the fidelity of the process. Interviews with key Informants regarding RFP process, benefit s, impacts. | Event histo-map development.<br><br>Formative & summative reporting of video development process via interviews and document review | | Project Management<br><br>NSU<br><br>Project Management & other players.<br><br>Other players and intended audience. |
| 2.5<br>B | A, E) In what ways did the SDADE personnel conform to their process for conducting | Interview 2.1 – SDADE Personnel to gather additional background regarding the | Event histo-map development. | | Project Management & other players. |

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| Conduct online DDN sessions for SD users of DDN | DDN sessions?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the online DDN session in accomplishing its goals?<br>U) In what ways were the SD users of DDN impacted by the online DDN sessions? | Implementation of DDN sessions..<br><br>Document Review – of the implementation process that has been developed.<br>Interview & Survey to Collect data regarding the fidelity of the process.<br>Interviews with key Informants regarding RFP process, benefits, impacts. | Formative & summative reporting of implementation process via interviews, and observation and document review<br><br>Comparative analysis? | | Other players and intended audience. |
| 3.1<br>A<br><br>Develop alternative classroom designs for DDN class rooms, evaluate and publish results | A, E) In what ways did the SDADE personnel conform to the design and implementation processes for<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the schools (and other audiences) impacted by the (i) alternative classroom designs, (ii) model classrooms, (iii) evaluation of these classrooms, and (iv) the publishing of the results? | Interview 2.1 – SDADE Personnel to gather additional background regarding the process for developing and implementing the processes to conduct each of the activities identified in the guiding question?<br>Document Review – of the design and implementation process that has been developed<br>Interview & Survey to Collect data regarding the fidelity of the design/implementation process.<br>Interviews with key Informants regarding RFP process, benefits, impacts. | Event histo-map development.<br><br>Formative and summative analysis of implementation process of (i) developing "alternative" classroom designs, (ii) equip model classrooms, (iii) evaluate these classrooms, and (iv) publish the results?<br><br>Comparative analysis of design and equipping criteria with actual. | | Project Management<br><br>Project Management & other players.<br><br>Other players and intended audience. |
| 3.1<br>B<br><br>Provide funds to upgrade DN classrooms to leader schools<br><br>Not in budget | A, E) In what ways did the SDADE personnel conform to the design and implementation processes for (i) identify leaders in offering distance education courses and experiences, and (ii) provide funds to upgrade DDN classrooms?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the schools impacted by the funds provided? | Interview 2.1 – SDADE Personnel to gather additional background regarding the process for developing and implementing the processes to conduct each of the activities identified in the guiding question?<br>Document Review – of the design and implementation process that has been developed<br>Interview & Survey to Collect data regarding the fidelity of the design and implementation process.<br>Interviews with key Informants regarding RFP process, benefits, impacts. | Event histo-map development.<br><br>Formative and summative analysis of implementation of funding and leader identification processes.<br><br>Comparative analysis of leader criteria vs. actual.<br><br>Comparative analysis of "upgraded" classroom with actual. | | Project Management<br><br>Project Management & other players.<br><br>Other players and intended audience. |
| 3.2<br>A<br><br>Develop a clearing house for curriculum units and modules developed in SD | A, E) In what ways did the SDADE personnel and SDPTV conform to the design and implementation processes for (i) developing a clearinghouse ?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the teachers impacted by the development of the clearinghouse? | Interview 2.1 – SDADE Personnel to gather additional background regarding the process for developing and implementing the processes of developing a clearinghouse.<br>Document Review – of the design and implementation process that has been developed<br><br>Interview & Survey to Collect data regarding the fidelity of the design and implementation process.<br>Interviews with key | Event histo-map development.<br>Formative and summative analysis of implementation of clearinghouse development process.<br>Comparative analysis of effective clearinghouse criteria with actual. | | Project Management<br><br>Project Management & other players. |

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| | | Informants regarding RFP process, benefits, impacts. | | | Other players and intended audience. |
| 3.2<br>B<br><br>Identify private sector partners to provide on line education resources for SD teachers | A, E) In what ways did the SDADE personnel and SDPTV conform to the design and implementation processes for (i) identifying partners for the private sector to provide on-line education resources?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the teachers impacted by the online education resources? | Interview 2.1 – SDADE Personnel to gather additional background regarding the process for developing and implementing the processes developing partners<br>Document Review – of the design and implementation process that has been developed<br>Interview & Survey to Collect data regarding the fidelity of the design and implementation process.<br>Interviews with key Informants regarding RFP process, benefits, impacts. | Event histo-map development.<br><br>Formative and summative analysis of process of identifying partners.<br><br>Comparative analysis of criteria of an ideal partner with ideal. | | Project Management<br><br>Project Management & other players.<br><br>Other players and intended audience.<br><br>Liaison to private sector through USDLA - John Flores contact. |
| 3.2<br>C<br><br>Plan and hold a meeting of education leaders from neighboring states | A, E) In what ways did the SDADE personnel and SDPTV conform to the design and implementation processes for (i) planning and hold a meeting of education leaders ….?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the intended audiences of the meeting impacted? | Interview 2.1 – SDADE Personnel to gather additional background regarding the process for planning and holding the meeting.<br><br>Document Review – of the design and implementation process that has been developed<br><br>Interview & Survey to collect data regarding the fidelity of the design and implementation process.<br><br>Interviews with key Informants regarding RFP process, benefits, impacts. | Event histo-map development.<br><br>Formative and summative analysis of process of meeting development and implementation.<br><br>Comparative analysis of effective meeting characteristics with actual.<br><br>Comparative analysis of desired impact indicators with actual. | | Project Management<br><br>Project Management & intended audience.<br><br>Other players and intended audience. |
| 3.3<br>A<br><br>Assist schools to expand their telecommu nications networks | A, E) In what ways did the SDADE personnel and SDPTV conform to the design and implementation of the processes of (i) identifying the "remote" schools, and (ii) assisting schools in expanding their telecommunications infrastructure?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the intended audiences of the expanded telecommunications infrastructure impacted? | Interview 2.1 – SDADE Personnel to gather additional background regarding the processes designing and implementing the activities identified in the guiding question?<br><br>Document Review – of the design and implementation process that has been developed<br><br>Interview & Survey to Collect data regarding the fidelity of the design and implementation process.<br><br>Interviews with key Informants regarding RFP process, benefits, impacts. | Event histo-map development.<br><br>Formative and summative analysis of the implementation of the process of identifying remote schools and assisting schools.<br>Comparative analysis of characteristics of remote schools with those actually selected.<br>Comparative analysis of effective assisting process "rubric" with actual process conducted. | | Project Management<br><br>Project Management & other players.<br><br>Other players and intended audience. |
| 3.3<br>B<br><br>Identify | A, E) In what ways did the SDADE personnel conform to the design and implementation of the processes of (i) identifying partners to assist schools, and | Interview 2.1 – SDADE Personnel to gather additional background regarding the processes designing and implementing the processes | Event histo-map development.<br><br>Formative and summative analysis of the | | Project Management<br><br>Project |

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| partners to assist schools in using DDN more effectively | (ii.i) insuring that partners' efforts resulted in the DDN being used more effectively and (ii.ii) insuring that education opportunities increased?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the intended audiences of the DDN assistance impacted? | identified in the guiding question?<br><br>Document Review – of the design and implementation process that has been developed<br><br>Interview & Survey to Collect data regarding the fidelity of the design and implementation process.<br><br>Interviews with key Informants regarding RFP process, benefits, impacts. | implementation of the process of identifying partners.<br><br>Comparative analysis of characteristics of an effective partner with actual performance of selected partner.<br><br>Comparative analysis of actual increased educational opportunity achieved to pre-selected indicators. | | Management & other players.<br><br>Other players and intended audience. |
| 3.3<br>C<br><br>Initiate a pilot program for Associate of Arts degree | A, E) In what ways did the SDADE personnel and MTI conform to the design and implementation of the processes of (i) initiating an Associate of Arts Degree pilot program?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the design and implementation of each of the activities?<br>I) In what ways were the intended audiences of the Associate of Arts degree impacted? | Interview 2.1 – SDADE Personnel to gather additional background regarding the processes designing and implementing the processes identified in the guiding question?<br><br>Document Review – of the design and implementation process that has been developed<br><br>Interview & Survey to Collect data regarding the fidelity of the design and implementation process.<br><br>Interviews with key Informants regarding RFP process, benefits, impacts | Event histo-map development.<br><br>Formative and summative analysis of implementation of the process of initiating an AA pilot program.<br><br>Comparative analysis of "rubric" for high quality AA program with actual program initiated.<br><br>Comparative analysis of actual knowledge, skills and attitudes possessed with pre-determined ideal. | | Project Management<br><br>Project Management & other players.<br><br>Other players and intended audience. |
| 4.1<br>A<br><br>Develop formal strategies for course sharing through DDN | A) What formal strategies for course sharing by schools and districts using the DDN were/are established?<br>E) Who established these strategies and by what process?<br>I) What were the results of formal strategy implementation?<br>O) What were the barriers and facilitators to establishing formal strategies for course sharing?<br>U) What unanticipated outcomes resulted from formal strategy implementation? | Document review<br><br>Interview DECA and SDADE project management<br><br>School and district survey | Interview data will be analyzed for planning and implementation structures<br><br>End user school and district survey data will be tabulated and thematically categorized. | 10/12/01 Conduct interview<br>10/29-31/01 Administer survey<br>11/01 Survey tabulation | DECA SDADE project management<br><br>Resource Requirements<br>Cooperation of DECA SDADE project management<br>Survey tabulation |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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| 4.1<br>B<br><br>Develop a clearing house of courses and course units available over DDN | A) Was a clearinghouse of courses and course units available over the DDN developed?<br>E) How do the courses and course units directly relate to state standards and professional association curriculum reform guidelines?<br>I) How were/are quality processes established for course development?<br>O) What were/are the barriers and facilitators for course and course unit development and availability?<br>U) What unanticipated events resulted from developing a clearinghouse? | Web site review<br><br>Course and course unit analyses<br><br>Document review | The clearinghouse web site will be reviewed for accessibility and usability.<br><br>Sample course and course units will be analyzed for themes regarding standards relation and content. | 11/26-30/01 Web site review<br>12/17-19/01 Course and course unit analyses | Clearinghouse Web site<br><br>DECA SDADE project management<br><br>Resource Requirements |
| 4.2<br>A,B<br><br>Conduct needs assessment to identify needs of underserved groups in SD | A) Is the needs assessment complete?<br>E) What stakeholder groups does the needs assessment reference?<br>I) In what ways do clients perceive that that the needs assessments assist them in serving the needs of underrepresented groups?<br>I) What impacts do stakeholders currently envision for the future of a more inclusive policy of DE outreach to underserved groups?<br>O) What statewide and programmatic organizational structures were tapped while conducting the needs assessment? In what ways were these structures facilitative? Inhibiting?<br>U) What unforeseen outcomes resulted from needs assessment development? | Needs assessment analyses<br><br>Client interviews<br><br>Assessor interviews | Assessment documents will be analyzed for their ability to identify and detail steps for program staff outreach to underserved groups. Interviews will be thematically analyzed and summarized in a final report. Analyses will be evaluated for their thoroughness and tractability. | 11/1 -Check on status of assessments<br>11/30 -Due date for interviews<br>1/15/02-Content review of assessments | Nova Southeastern Lead Evaluators/needs assessment developers<br><br>Resource Requirements |
| 4.3<br>A<br><br>Offer support to partnerships of SD teachers to develop and offer exemplary curriculum units | A) What support was offered to partnerships of South Dakota teachers to develop and offer exemplary curriculum units using the DDN? How did recipients perceive the support?<br>E) What criteria provided guidance for forming partnerships? Who established the criteria?<br>E) How were partnerships of South Dakota teachers selected for support?<br>E) What role do other state and federal supported initiatives play in bringing DE technology use to scale?<br>I) How were structures for quality determined and put in place to guide the development of exemplary curriculum units using the DDN? What were the results?<br>I) How was the offering of units organized and implemented? | Document review<br><br>Curriculum unit review<br><br>Interview teachers and students<br><br>Interview DECA SDADE project management<br><br>Expert analysis of state delivered technology programming. | The partnership RFP will be reviewed for guiding structures and criteria. Curriculum units will be reviewed for themes and integration of DE strategies. Interview data from a sample of teachers and students will be analyzed for accessibility and affect on participant knowledge and attitudes. To determine the relationship and perhaps synergistic effect of the multiple statewide technology programs supported by state and federal government, experts and staff interview and focus group will be thematically analyzed. | 9/15/01 Review RFP<br>11/15 Interview SDADE project management<br>12/15/01 TBD Review of curriculum units<br>2/15/02 TBD Interview teachers and students. | Resource Requirements<br>Cooperation of teachers, students, and DECA SDADE project management.<br><br>Curriculum unit acquisition. |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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| | With what results?<br>O) What barriers and facilitators were encountered in partnership formation and curriculum unit development?<br>U) What unanticipated events resulted from curriculum unit partnerships? | | | | |
| 4.3<br>B<br><br>Explore and develop partnerships with private sector to enhance curriculum offerings | A) What partnerships with private sector organizations to enhance curriculum offerings in South Dakota exist?<br>A,E)What guidance and strategies were offered for partnership development? Who determined the guidance and strategies?<br>I) What partnerships resulted? What background did each partner contribute?<br>O) What were the challenges and facilitators for partnership exploration and development?<br>E) What resulted from these partnerships?<br>U) What unanticipated events resulted from partnerships with private sector organizations? | DECA SDADE project management interview<br><br>Partner interviews<br><br>Document review | Interview data will be analyzed for themes and structures related to planning and implementation. | 11/12/01 Conduct interviews<br>11/13-14 Review documents | USDLA<br><br>Resource Requirements<br>Cooperation of partners and DECA SDADE project management. |
| 4.3<br>C<br><br>Develop links with other states to offer DE courses | A) What interstate compacts in DE exist with SD and her neighbors?<br>E) How were links with other states that offer courses at a distance via two-way telecommunications networks developed?<br>I) What changes in distance education resulted from links that were made? | DECA SDADE project management interview<br><br>Multi-state participant interviews<br><br>Document review | Interview data will be analyzed for planning and implementation structures. Documents will be reviewed to study the results of multi-state links. Documents TBD. | 11/29-30 Conduct interviews<br>12/14 Complete document review | DECA SDADE project management<br>Multi-state contacts.<br><br>Resource Requirements<br>Cooperation of DECA SDADE project management and participating state contacts.<br>Document acquisition. |
| 4.4<br>A<br><br>Offer support to partnerships of teacher groups for developing exemplary assessment strategies for DE | A) How do those working to implement assessment in DE perceive the quality of support rendered by external agencies to be?<br>E) Is the support resulting in usable assessments? How usable?<br>I) In what new and unique ways are these assessments determining what students have learned and how curriculum responds to learning needs?<br>O) What barriers or aids exist in the process of supporting assessment development?<br>U) What unanticipated consequences are a result of assessment development? | Review of teacher lesson plans<br><br>Survey of formal and informal assessment strategies<br><br>Teacher interviews<br><br>Service logs of external agencies designated to assist in assessment development<br><br>Respond to distance learning pedagogy. | A sample of lesson plans from teachers participating the delivery of DE courses, or enhancing their curriculum with DE experience. Assessment practices will be documented, tallied, and categorized (performance, alternative, norm/criterion referenced, standardized, etc.). Analysis will also detect for informal assessment practices (documented and tallied). Interviews will be thematically categorized. | 11/12-Sources for lesson plans will be identified<br>11/26-Lesson plan collection complete and analysis commences<br>12/5 -Sample of teachers identified for interview—interviews begin.<br>12/12-Interviews complete | DECA;<br>Nova Southeastern University;<br>K-12 school teachers<br><br>Resource Requirements<br>The cooperation of teachers in select school districts in sharing their lesson plans for content analysis; |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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| 4.4<br>B<br><br>Collect and make available onlin e a variety of assessment resources | A) What assessment strategies exist, who developed them?<br>E) By what means and to whom are assessments accessible?<br>E) What quality control process guides the selection of assessment for inclusion to the database?<br>I) What is the frequency of access to online assessment resources?<br>I) What contributions in engaged learning do assessments make in the classrooms of teachers who use them?<br>O) What state/local governmental processes are helping or hindering the dissemination of exemplary DE assessm ents?<br>U) What are the unanticipated outcomes of posting of assessments online? | Assessment database server log files<br><br>End users of assessment resources<br><br>Assessment site Webmaster and database developer interviews | Assessment website log files will reveal individuals (unique IP addresses) accessing the resource. Frequencies of various assessments will be tallied and summarized by content area, grade level, etc. Developer interviews will be thematically summarized. End users of assessment resources will be interviews—short case reports will result from these interviews. | 10/2 -Those charged will the responsibility of developing the database are identified<br>12/5 -Analysis of server log file daily reports begins.<br>12/15-Interviews with developers are conducted. | Parties whose discharge it is to collect and disseminate assessment assets;<br>DECA;<br><br>Resource Requirements<br>Server log file analysis package applied to online assessment database;<br>Process for identifying users of the assessment database. |
| 5.1<br>A<br><br>Offer action research funds to teachers to support scientific research of the DDN | A,E) In what ways did SDADE personnel conform to their process for dissemination of the research and evaluation efforts?<br>I) In what ways were the intended audiences of the presentations and dissemination activities impacted?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the dissemination process in accomplishing its goals? | Interview<br><br>Students tak ing classes on DDN could journal throughout the semester.<br><br>Study documents prepared/published<br><br>Focus groups<br>Interviews<br>Survey | Event histo -map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts. | | Project Management & other players.<br><br>NSU<br><br>Other players and intended audience. |
| 5.1<br>B<br><br>Develop a state wide research agenda | A, E) In what ways did SDADE personnel conform to their publication of research process?<br>I) In what ways were the intended audiences of the publication impacted?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the project in accomplishing its goals? | Survey?<br><br>Success stories from teachers and students and other users of DDN?<br><br>Conduct scientifically appropriate studies on different innovations of DE | Event histo -map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts. | | Contact NSU Project Management & other players.<br><br>Other players and intended audience. |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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| 5.2<br>A<br><br>Collect comprehensive evaluation data about SDADE and DDN | To be devised by the second level evaluation team | | | | |
| 5.2<br>B<br><br>Conduct needs assessment to identify future activities using DDN | To be devised by the second level evaluation team | | | | |
| 5.2<br>C<br><br>Identify a team of external evaluators to conduct a site visit to evaluate the activities of SDADE | To be devised by the second level evaluation team | | | | |
| 5.2<br>D<br><br>Produce a video dealing with evaluation of DE | To be devised by the second level evaluation team | | | | |
| 5.3<br>A<br><br>Review SDADE funded action research and publish summary of this | A, E) In what ways did the SDADE personnel conform to their process for dissemination of the research and evaluation efforts?<br>I) In what ways were the intended audiences of the presentations and dissemination activities impacted?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered | Review research published | Event histo-map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts. | | NSU Eval team members will write summaries?<br><br>Project Management & other players.<br><br>Other players and |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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| | the dissemination process. in accomplishing its goals? | | | | intended audience. |
| 5.3 B<br><br>Publish a review of best practices for effective DE in SD | A, E) In what ways did the SDADE personnel conform to their publication of research process?<br>I) In what ways were the intended audiences of the publication impacted?<br>U) Were there any unexpected changes or consequences?<br>O) What structures, policies, or events in the organizations or environment helped or hindered the video development project in accomplishing its goals? | Survey teachers and administrators K-12 through higher ed & technical colleges.<br><br>Success stories from teachers and students and other users of DDN? | Event histo-map development.<br><br>Formative and summative review of promotional program development process.<br><br>Comparative analysis against intended impacts. | | Contact NSU<br><br>Project Management & other players.<br><br>Other players and intended audience. |
| 5.3 C<br><br>Publish results of evaluation and research activities conducted in SD | To be devised by the second level evaluation team | | | | NSU |
| 5.3 D<br><br>Collect data to develop and publish a technology profile on SD education | To be devised by the second level evaluation team | | | | |
| 5.3 E<br><br>Present at professional conferences about DE in SD | To be devised by the second level evaluation team | | | | |
| 6.1 A,B C,D<br><br>Hire a project director and staff, seek additional funding, submit | A) How many staff have been hired?<br>A) What additional funding has been requested for the project and from where?<br>E) Who are the SDADE staff and what do they do?<br>E) What reports have been submitted and what is the frequency of these submissions? | Document review<br><br>Staff profiles<br><br>Literature review<br><br>Interview SDADE and DECA staff | DECA staff will produce documentation of organizational activities and examples of dissemination activities for inspection. It may also be necessary to interview SDADE staff to explore roles of each within the project. | Visit to SDADE office to be arranged | Department of Education and Cultural Affairs (DECA). Documentation of publications and reports from external sources.<br><br>Resource Requirements |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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| reports as required, disseminate outcomes | I) How have the outcomes of the project been disseminated?<br>O) What prevented or aided the dissemination activities?<br>U) What unanticipated outcomes are a result of the dissemination of the reports and publications? | | | | Cooperation from SDADE project staff, and access to documentation.<br>Transcription and analysis of interview tapes. |
| 6.2<br>A, B, C<br><br>Identify intra and inter state partners, develop relations with other STAR Schools projects, identify additional activities for SDADE | A) What intra- and inter-state partners have been identified to work with SDADE?<br>E) How have relationships with these partners developed throughout the life of the project?<br>E) What have been the most positive contributions to the project from the partnership agreements?<br>I) How have the partnerships impacted upon the project?<br>I) What additional (future) activities have been identified?<br>O) How have organizational infrastructures affected partnership activities and agreements?<br>U) What unanticipated outcomes have resulted from the partnership agreements?<br>(See Objective 4.3) | Interviews with project management and SDADE partners. | Partner agreement documentation will be produced by DECA and SDADE staff.<br><br>In interviews, SDADE staff will provide evidence of partnership activities and assess the impact of these on the project. | Visit to SDADE office to be arranged | DECA staff<br>SDADE team<br>All identified partners<br><br>Resource Requirements<br>Cooperation from SDADE project staff, and access to relevant records.<br>Transcription and analysis of taped interviews. |
| 6.3<br><br>Manage SDADE budget, disburse funds, submit financial reports | A) Who is responsible for managing the project's finances?<br>E) How have the funds been allocated?<br>I) What procedures have been put into place to ensure fair and appropriate allocation of resources?<br>O) What organizational factors have created problems in the management of the project's budget?<br>U) Have there been any unforeseen developments resulting from the management of the budget? | Interviews with project management team and DECA staff.<br><br>Inspection of the financial records of the project. (See comments in next column) | An inspection of the project's budget statements including all payment records and financial reports. (NB: Is this a role for the evaluation team?) | Visit to SDADE office to be arranged | Resource Requirements<br>Cooperation from SDADE project staff, and access to relevant records.<br>Transcription and analysis of taped interviews. |
| 6.4<br>A,B<br><br>Establish SDADE office, develop comprehensive SDADE web presence | A) What physical space does the SDADE office occupy?<br>E) What virtual (or online) presence does the SDADE office have?<br>E,I) How functional and effective is the SDADE office environment?<br>E,I) How effective has the SDADE office been in its current location?<br>O) What organizational contraints have been experienced and how have these been overcome?<br>U) What unanticipated consequences have resulted from the physical and/or virtual presence of the SDADE office? | Interview with SDADE office staff.<br><br>Interview with project management team.<br><br>Visit to the SDADE office.<br><br>Inspection of the SDADE project website.<br><br>Website logs of visits, comments, etc. | A visit will be paid to the SDADE office where project staff and management will be interviewed about their views on the office accommodation and its effectiveness. There will be an exploration of problems experienced, and the means by which project staff have overcome them. An inspection of the project website, including an analysis of the visitor traffic (and guestbook comments) as well as other statistics will be | Visit to SDADE office to be arranged | DECA staff<br>SDADE project staff<br>Web developers<br><br>Resource Requirements<br>Cooperation from SDADE project staff, and access to all office space.<br>Transcription and analysis of taped interviews. |

| Goal/ Activity | Key Questions | Data Collection Methods/Tools | Analysis Procedures | Timeline | Information Sources |
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APPENDIX C – SUMMARY EVALUATION OF SDADE OBJECTIVES
(Project managers provided evaluators the information included in this Appendix)

| **Goal #1: Education using the Digital Dakota Network will be UNDERSTOOD and ACCEPTED by South Dakotans.** | | | | |
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| **Goal** | **Activity To Be Accomplished** | **How Activity Will Be Accomplished** | **Documentation / Artifacts** | **Status** |
| 1.1 Familiarize South Dakotans with the DDN | A. Produce a promotional program on South Dakota Public Television dealing with the DDN and distance education in South Dakota. | Contract with SDPTV | SDPTV Contract<br>Master Copy of Program | Production Completed |
| | B. Produce and distribute pamphlets and brochures dealing with the South Dakota Alliance for Distance Education: South Dakota's Star Schools Project (SDADE), the DDN, and distance education. | ~~Contract with GOED~~<br><br>*To be completed by DECA instead of GOED | Distance Learning Pamphlets/Brochures and Posters (Hard Copies)<br><br>PDF downloads on SDADE website | Extension Requested and Approved |
| | C. Produce and distribute news releases and other promotional materials dealing with distance education activities in South Dakota. | General news releases following DTL<br>Various DDN Event News Releases | Copies of Various News Releases | Completed |
| 1.2 Inform Educators About the Effectiveness of Distance Education | A. Produce a series of videos that explain the potential for distance education and the South Dakota approach to distance education. | Contracts with NOVA and SDPTV | NOVA and SDPTV Contracts<br>Master Copies of the Videos | Completed |
| | B. Contribute to existing on-line newsletters with information that deals with South Dakota's approach to distance education. | Contributions to:<br>Administrative Newsletter<br>SDDLA | Copies of Newsletters or Links to On-line Archives including the articles. | Completed |
| 1.3 Familiarize parents and students with the concept of distance education and the potential | A. Produce informational brochures for parents that explain the DDN and distance education in South Dakota. | ~~Contract with GOED~~<br><br>*To be completed by DECA instead of GOED | Distance Learning Brochure (Hard Copy)<br><br>PDF downloads on SDADE website | Extension Requested and Approved |

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| benefits of this approach. | | | | |
| 1.4<br>Provide increased access to the DDN to school and community groups for meetings, conferences, and other community-based activities. | A. Plan and offer abbreviated Distance Teaching and Learning Academies (DTLs) for community members who are likely to use newly installed DDN classrooms. | DECA Office of Technology Staff will organize and present mini sessions for Parks, Science Center and Museum Staff | Copy of Agenda<br>Copy of any Training Materials<br>List of Presentations ( including: dates, times, locations, and audience) | Accomplished<br><br>Extension Requested and approved to provide further training and to support new sites. |
| | B. Produce explanatory videos on how to use DDN distance education classrooms. | Contracts with NOVA and SDPTV | NOVA and SDPTV Contracts<br>Master Copies of Videos | In Process<br>Will Be Completed |
| | C. Install a number of DDN classrooms in locations that are educational resources for schools, teachers, and students. | DECA will identify locations. (Parks, Science Centers, Museums)<br>BIT will install equipment.<br>Contracts with locations. | Location/Site Contracts<br>Itemized Equipment Lists<br>Press Release, Photos, Etc<br>(5 locations)<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | Accomplished<br><br>Extension Requested and Approved identify and complete installations in two more locations. |

| Goal #2: South Dakota educators will be PREPARED and SUPPORTED so they can effectively teach students at a distance. | | | | |
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| **Goal** | **Activity To Be Accomplished** | **How Activity Will Be Accomplished** | **Documentation / Artifacts** | **Status** |
| 2.1 Develop facilities and curriculum materials for teacher education programs so preservice teachers are prepared to teach students at a distance. | A. Install a DDN classroom at each of South Dakota's public university teacher education programs that is dedicated to teacher training and research on distance education. | Contracts with: BHSU, SDSU, DSU, USD, and NSU | Copies of Contracts for Each University<br>Itemized Equipment Lists<br>Press Release, Photos, Etc | Completed |
| | B. Offer special DTL Academies for the teacher education faculty in South Dakota. | Contract with NOVA. | Copy of Agenda and Training Materials<br>List of Academies (including: dates, times, locations, and audience) | Completed |
| | C. Produce model 'distance education foundations' courses for teacher education undergraduate and graduate students that focus on distance education in South Dakota. | Contracts with the Colleges of Education. | Copies of Contracts for Each University<br>Copies of Model Curriculum from Each University.<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | Completed |
| 2.2 Provide leadership through conferences and inservice and staff development to South Dakota teachers and administrators about teaching and managing a distance education system. | A. Plan and implement a conference (of track of an existing conference such as the TIE Spring Conference) dealing with distance education in South Dakota. | Contract with TIE. | Copy of TIE Contract<br>TIE Conference Book | Accomplished<br><br>Extension Requested and approved– to support TIE 2003 Conf. |
| | B. Develop tracks as part of conferences for content area professional organizations dealing with distance education, the DDN, and the SDADE. | Distribute RFPs and Award Contracts | Copy of RFP<br>Copies of Proposals<br>Copies of Contracts Awarded<br>Copies of Letters – Reject/Not Awarded<br>Copies of Conference Books | Completed |

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| 2.3<br>Provide inservice and staff development for South Dakota teachers and administrators dealing with innovative teaching strategies using technology. | A. Contact administrators to identify distance education needs that are unmet and develop plans to deal with these. | Distance Education Needs Assessment | Soyer Survey | Completed |
| 2.4<br>Provide teachers and school districts with support to assist them in using the DDN. | A. Offer innovation funds to schools and teachers to assist them develop special events using the DDN that fit the local curriculum. | Special DDN Projects<br>Thematic Web Pages<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/ddnproj/index.htm<br>http://www.state.sd.us/deca/themes/index.htm | Copies of RFP<br>Copies of Proposals<br>Copies of Contracts Awarded<br>Copies of Letters – Reject/Not Awarded<br>Copies of Curriculum | Completed |
| 2.5<br>Develop training | A. Produce training videos for preservice, inservice, and stakeholder use, especially for individuals using the DDN. | Contracts with NOVA and SDPTV | NOVA and SDPTV Contracts<br>Master Copies of Videos Produced | Completed |

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| materials that can be used to prepare educators, community members, and other stakeholders to use the DDN effectively for education, community development, and workforce growth. | B. Conduct online DDN sessions for South Dakota users of the DDN. | DECA Staff | StarNet<br>DDN Training Sessions<br>DDN Sessions w/ Project Developers<br>DDN Training Sessions & Support for other Divisions w/in DECA | Completed |
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| Goal #3: South Dakota schools will be CONNECTED to the DDN. | | | | |
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| **Goal** | **Activity To Be Accomplished** | **How Activity Will Be Accomplished** | **Documentation / Artifacts** | **Status** |
| 3.1<br>Identify schools in each of South Dakota's school districts to have additional classrooms equipped and connected to the DDN, and selected educational support agencies will be equipped and connected to the DDN. | A. Develop several 'alternative' classroom designs for DDN classrooms, equip several model classrooms using these designs, evaluate these classrooms and publish the results of this evaluation. | Wireless Technologies | Copy of RFP<br>Copies of Proposals<br>Copies of Contracts Awarded<br>Copies of Letters – Reject/Not Awarded<br>Copies of Evaluation Reports | Unfunded Activity<br><br>Extension Requested and approved |
| | B. Provide funds to upgrade DDN classrooms to several schools that are identified as leaders in offering distance education courses and experiences. | Wireless Technologies<br>Polycom Units | Copy of RFP<br>Copies of Proposals<br>Copies of Contracts Awarded<br>Copies of Letters – Reject/Not Awarded<br>Copies of Evaluation Reports | Unfunded Activity<br><br>Extension Requested and approved<br><br>*Note: Based on savings when purchasing video conferencing equipment for the educational resource sites, additional units were able to be purchased and placed in 4 school settings. |
| 3.2<br>Link Schools and teachers to on-line | A. Develop a clearinghouse for curriculum units and modules developed in South Dakota for South Dakota teachers. | DDN Curriculum Website | http://www.ddncurriculum.k12.sd.us | Completed |

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| resources using the DDN. | B. Identify partners from the private sector to provide on-line education resources for South Dakota teachers. | Contract with USDLA DECA<br>http://www.state.sd.us/deca/ddn4Learning/ProgramGuide/index.htm<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm<br>http://www.state.sd.us/deca/ddn4Learning/statewide/digitalcurr.htm | USDLA Contract<br>StepStar, Digital Curriculum, StarNet | Accomplished<br><br>Extension Requested and approved – to continue to provide these resources. |
| | C. Plan and hold a meeting of education leaders from states surrounding South Dakota to discuss connecting statewide telecommunications networks for the sharing of courses, curriculum events, and system costs. | ICE – Interstate Connections<br>(Iowa, Nebraska, North Dakota, South Dakota, Wyoming) | Agenda<br>List of Participants<br>Meeting Binder | Completed |
| 3.3<br>Provide assistance to schools in order for them to connect to the DDN. | A. Assist schools in expanding their telecommunications infrastructure, especially remote schools not connected to the DDN. | Wireless Technologies | Copy of RFP<br>Copies of Proposals<br>Copies of Contracts Awarded<br>Copies of Letters – Reject/Not Awarded | Unfunded Activity<br><br>Extension Requested and approved |
| | B. Identify partners to assist schools in using the DDN more effectively and to provide assistance in increasing educational opportunities. | Contract with USDLA DECA<br>http://www.state.sd.us/deca/ddn4Learning/ProgramGuide/index.htm<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm<br>http://www.state.sd.us/deca/ddn4Learning/statewide/digitalcurr.htm | USDLA Contract<br>StepStar, Digital Curriculum, StarNet | Accomplished<br>Extension Requested and approved – to continue to provide these resources. |
| | C. Initiate a pilot program leading to an Associate of Arts degree to prepare technical support personnel for the Digital Dakota Network. | Contract with Mitchell Technical Institute | MTI Contract<br>Copy of Syllabus and Course Curriculum | In Process<br>Extension Requested and approved- to continue support and development of program. |

| Goal #4: Instruction will be OFFERED and access to instruction INCREASED using the DDN, especially in needed subjects such as mathematics, sciences, foreign languages, and literacy. | | | | |
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| **Goal** | **Activity To Be Accomplished** | **How Activity Will Be Accomplished** | **Documentation / Artifacts** | **Status** |
| 4.1<br>Offer courses so they can be easily infused into the curriculum, with special attention to state standards and national published reform guidelines. | A. Develop formal strategies for course sharing by schools and districts using the DDN. | DDN Clearing House http://www.state.sd.us/deca/distanceLearning<br>WebCT http://webct.k12.sd.us<br>SDADE Curriculum<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | | Completed |
| | B. Develop a clearinghouse of courses and course units that are available over the DDN, with special emphasis on courses and units that directly relate to state standards and professional association curriculum reform guidelines. | DDN Clearing House http://www.state.sd.us/deca/distanceLearning<br>DDN Curriculum http://www.ddncurriculum. k12.sd.us<br>SDADE Curriculum<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | | Completed |
| 4.2<br>Attract traditionally underserved groups to courses and experiences in mathematics, sciences, foreign languages, and literacy. | A. Conduct a needs assessment to identify needs of traditionally underserved groups that could be met using distance education. | DECA | Soyer Survey | Completed |
| | B. Conduct needs assessments in order to develop a statewide plan to use the DDN to provide curriculum in mathematics, sciences, foreign languages and literacy to traditionally underserved groups. | DECA | Soyer Survey | Completed |
| 4.3<br>Develop exemplary curriculum experiences, | A. Offer support to partnerships of South Dakota teachers to develop and offer exemplary curriculum units using the DDN. | Contracts w/ Districts and Teachers<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/curriculum.htm | FACS Parenting Course<br>FACS Career Exploratory<br>TI-83 CBL Math/Science Elective<br>Introduction to Archeology | Completed |

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| units, and courses that can be used and that serve as models. | B. Explore and develop partnerships with private sector organizations that offer distance education curriculum units and modules and innovative approaches for teaching and learning at a distance. | DECA | USDLA Contract<br>Digital Curriculum | Completed |
| | C. Develop links with other states that offer courses at a distance via two-way telecommunications networks. | ICE - Interstate Connections<br>(Iowa, Nebraska, North Dakota, South Dakota, Wyoming) | Agenda<br>List of Participants<br>Meeting Binder | Completed |
| 4.4<br>Develop assessment procedures for use with distance learners. | A. Offer support to partnerships of teacher groups for the development of exemplary assessment strategies for distance education courses and experiences. | DECA, TIE and possibly HPR-TEC | Assessment Tool-Kit<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | Unfunded Activity<br><br>In Process<br><br>Extension Requested and approved |
| | B. Collect and make available online a variety of assessment resources. | DECA and TIE (Assessment Tool-Kit) | Assessment Tool-Kit<br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | Unfunded Activity<br><br>In Process<br><br>Extension Requested and approved |
| | | | | |

| Goal #5: A program of RESEARCH and EVALUATION will be established to document the impact and effectiveness of the DDN and the distance education efforts underway in South Dakota. | | | | |
|---|---|---|---|---|
| **Goal** | **Activity To Be Accomplished** | **How Activity Will Be Accomplished** | **Documentation / Artifacts** | **Status** |
| 5.1 Conduct scientifically appropriate studies on the diffusion of the innovation of distance education. | A. Offer action research funds to South Dakota teachers to support scientific examinations of the DDN and the implementation of distance education. | Contracts with ITDE and Teachers | Encyclopedia of Research on Distance Education in South Dakota<br><br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/ar/index.htm | Accomplished<br><br>Extension Requested and approved – for DECA to oversee and complete additional research studies. |
| | B. Develop a statewide research agenda that investigates the process of diffusion of distance education that provides guidance for other states that wish to construct a statewide distance education system. | Evaluation Team | Action Research<br>Site Visits<br>SDADE Evaluation Reports | Completed |
| Objective 5.2 Evaluate the activities of the SDADE and teaching and learning activities using the DDN, with special emphasis on accountability, effectiveness, impact, organizational | A. Collect comprehensive, statewide baseline, formative, and summative evaluation data about the SDADE, the DDN, and distance education, and submit reports as required by the US Department of Education, and as needed by SDADE project leaders. | Evaluation Team | Interim Evaluation Report<br>Final Evaluation Report | In Process<br><br>Extension Requested and approved – to complete evaluation for continued activities. |
| | B. Conduct needs assessment activities to identify future activities to be addressed using the DDN and distance education, with special emphasis on traditionally underserved groups. | DECA - Evaluation Team | Soyer Survey | Completed |

| | | | | |
|---|---|---|---|---|
| context, and unanticipated outcomes. | C. Identify a team of external evaluators who are experts in distance education and evaluation and have this team conduct a site visit to evaluate the activities of the SDADE. | Evaluation Contract | Report of Findings | In Process<br><br>Extension Requested and approved - to complete site visit in April 2003 |
| | D. Produce a video dealing with evaluation of distance education. | Contract with NOVA and SDPTV | Video | Completed |
| Objective 5.3 Communicate the activities of the project, with special emphasis on the dissemination of the results of research and evaluation efforts. | A. Review SDADE-funded action research and publish summaries of this research in a Handbook of Distance Education Research | Contract with ITDE/NSU | Encyclopedia of Research on Distance Education in South Dakota<br><br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/ar/index.htm | Accomplished<br><br>Extension Requested and approved – for DECA to publish additional action research findings. |
| | B. Publish a review of "best practices" for effective distance education in South Dakota. | Contract with ITDE/NU | Encyclopedia of Research on Distance Education in South Dakota<br><br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/ar/index.htm | Completed |
| | C. Publish the results of evaluation and research activities conducted in South Dakota, including research monographs, guides for successful teaching at a distance, videos on the South Dakota approach to distance education, and reports on the results of the SDADE's activities. | DECA - Evaluation Team | Final Evaluation Reports<br>Encyclopedia of Research on Distance Education in South Dakota<br>Foundations of Distance Education Videos<br>SDADE Website<br><br>http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | In Process<br><br>Extension Requested and approved – to publishing results of continuing activities. |
| | D. Collect data to develop and publish a technology profile on South Dakota education. | DECA - Evaluation Team | Annual Technology Survey<br>Soyer Survey<br>Site Visit and Action Research Reports | Completed |

| | | | | |
|---|---|---|---|---|
| | E. Present at professional conferences about distance education in South Dakota. | DECA | School, District and Regional Workshops State, National and International Conferences | Completed |
| | | | | |

| Goal #6: The South Dakota Department of Education and Cultural Affairs will manage the South Dakota Star Schools Project. | | | | |
|---|---|---|---|---|
| **Goal** | **Activity To Be Accomplished** | **How Activity Will Be Accomplished** | **Documentation / Artifacts** | **Status** |
| Objective 6.1 Hire a project director and staff, and establish the SDADE management team. | A. Hire SDADE staff. | DECA http://www.state.sd.us/deca/ddn4Learning/staff | | Completed |
| | B. Seek additional and continued funding for the SDADE. | DECA | FIE<br>Award Notification | Completed |
| | C. Submit reports as required by the U.S. Department of Education's Star Schools Program. | DECA | Reports submitted as requested/required | Accomplished Will be completed throughout Extension. |
| | D. Disseminate the outcomes of the SDADE activities. | DECA Conference / Workshop Presentations Publications http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | | Accomplished Will be completed throughout Extension. |
| Objective 6.2 Develop an advisory "Partners' Advisory Group." | A. Identify intra- and inter- state partners to the SDADE. | DECA | TIE<br>ICE<br>Programming Partners | Completed |
| | B. Develop relationships with other Star Schools projects, nationwide. | DECA | StepStar<br>StarNet | Completed |
| | C. Identify additional activities for the SDADE. | DECA | FIE<br>Other State Funds | Completed |
| Objective 6.3 Identify DECA as the SDADE fiscal agent | A. Manage the SDADE budget, disburse funds, and submit financial reports and required and requested. | DECA – Grants Management | Fiscal Records and Reports | Completed |
| Objective 6.4 Establish a star schools project office – physical and virtual. | A. Establish an SDADE office. | DECA | Office of Technology | Completed |
| | B. Develop a comprehensive SDADE WWW-presence. | DECA SDADE Website http://www.state.sd.us/deca/ddn4Learning/statewide/SDADE/index.htm | | Completed |
| | | | | |

APPENDIX D – TEACHER EVALUATION SURVEY AND RESULTS

Survey

*South Dakota Alliance For Distance Education*

*Questionnaire*

Part I: Background Information

Date: _____

All responses will be kept confidential. Please fill in the circle or answer the question.

1. What is your gender? o *female* o *male*

2. What is your age? _____

3. How many years have you been employed in education, including this year? _____

4. Indicate your level of formal education.

| o | o | o | o | o |
|---|---|---|---|---|
| BA/BS | BA/BS + 15 Sem. Cr. | MA/MS | MA/MS + 15 Sem. Cr. | Doctorate |

5. What best describes your profession?

o *K-12 Teacher*

o *School Administrator*

o *School Library/Media*

o *Higher Education Instructor/Professor*

o *Other Education – Specify* _____

6. What is your level of experience and background in distance education?

| o | o | o | o | o |
|---|---|---|---|---|
| None | Very Little | Some | Quite a Bit | Expert |

7. Do you own a personal computer? o *yes* o *no*

8. How would you rate your competence in the use of instructional technology?

| o | o | o | o |
|---|---|---|---|
| Novice | Somewhat Competent | Very Competent | Expert |

9. How many professional conferences do you attend in an average year, as either a participant or attendee?

10. How many professional organizations are you a member of?

Part II: Organizational Opinion Survey

Please Circle the Number that
Most Closely relates to your Opinion
SD = Strongly Disagree
D = Disagree
MD = Mildly Disagree
U = Uncertain
MA = Mildly Agree
A = Agree
SA = Strongly Agree

| The Organization where I work is: | SD | D | MD | U | MA | A | SA |
|---|---|---|---|---|---|---|---|
| 1. cautious about accepting new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. a leader among other organizations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. suspicious of new ways of thinking. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. very inventive. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. often consulted by other organizations for advice and information. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. skeptical of new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. creative in its method of operation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. usually one of the last of its kind to change to a new method of operation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. considered one of the leaders of its type. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. receptive to new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. challenged by unsolved problems. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. follows the belief that “the old way of doing things is the best”. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. very original in its operating procedures. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. does not respond quickly enough to necessary changes. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. reluctant to adopt new ways of doing things until other organizations have used them successfully. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. frequently initiates new methods of operation. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. slow to change. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. rarely involves employees in the decision-making process. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. maintains good communication between supervisors and employees | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. influential with other organizations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 21. seeks out new ways to do things. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22. rarely trusts new ideas and ways of functioning. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23. never satisfactorily explains to employees the reasons for procedural changes. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24. frequently tries out new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25. willing and ready to accept outside help when necessary. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

*Part III: Individual Opinion Survey*

Please Circle the Number that
Most Closely Relates to your Opinion
SD = Strongly Disagree
D = Disagree
MD = Mildly Disagree
U = Uncertain
MA = Mildly Agree
A = Agree
SA = Strongly Agree

| | **SD** | **D** | **MD** | **U** | **MA** | **A** | **SA** |
|---|---|---|---|---|---|---|---|
| 1. My peers often ask me for advice or information. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. I enjoy trying out new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. I seek out new ways to do things. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. I am generally cautious about accepting new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. I frequently improvise methods for solving a problem when the answer is not apparent. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. I am suspicious of new inventions and new ways of thinking. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. I rarely trust new ideas until I can see whether the vast majority of people around me accept them. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. I feel that I am an influential member of my peer group. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. I consider myself to be creative and original in my thinking and behavior. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. I am aware that I am usually one of the last people in my group to accept something new. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. I am an inventive kind of person. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12. I enjoy taking part in the leadership responsibilities of the groups I belong to. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. I am reluctant about adopting new ways of doing things until I see them working for people around me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. I find it stimulating to be original in my thinking and behavior. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. I tend to feel that the old way of living and doing things is the best. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. I am challenged by ambiguities and unsolved problems. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. I must see other people using new innovations before I will consider them. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. I am receptive to new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19. I am challenged by unanswered questions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20. I often find myself skeptical of new ideas. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

*Part IV: Distance Education*

Instructions: Please indicate how you feel about the following statements. Circle the appropriate number after each question to indicate your feelings.
Distance Education is defined as: *institutionally based education where the teacher and learning group are separated and where interactive technologies are used for the sharing of learning experiences.*

| | | strongly disagree | disagree | slightly disagree | slightly agree | agree | strongly agree |
|---|---|---|---|---|---|---|---|
| 1. | I believe that distance education can improve education in South Dakota. | 1 | 2 | 3 | 4 | 5 | 6 |
| 2. | My school is ready to become involved in distance education. | 1 | 2 | 3 | 4 | 5 | 6 |
| 3. | I know a great deal about distance education projects in South Dakota. | 1 | 2 | 3 | 4 | 5 | 6 |
| 4. | Interactive television will provide learners with many valuable experiences. | 1 | 2 | 3 | 4 | 5 | 6 |
| 5. | I personally want to be involved in distance education activities. | 1 | 2 | 3 | 4 | 5 | 6 |
| 6. | Staff development for educators is necessary in order for distance education to be implemented effectively. | 1 | 2 | 3 | 4 | 5 | 6 |
| 7. | My educational colleagues are supportive of the idea of distance education. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. | I do not consider myself to be anxious when using or considering the use of new technologies, such as the computer, the World-Wide-Web, or instructional television. | 1 | 2 | 3 | 4 | 5 | 6 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 9. | The person in my organization who is an innovator I try to emulate is: (circle one) | principal | Other admin-istrator | Library media specialist | A classroom teacher | A special teacher (e.g. music) | Someone Else _____ |

10. I have the following comments about distance education in South Dakota:

# Tables

Table 1a: Questionnaire – South Dakota Teachers Who Participated in Training

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Age | 167 | 23 | 60 | 41.81 | 9.23 |
| Years in Education | 169 | 0 | 53 | 16.76 | 10.15 |
| Experience in Distance Education | 170 | 1 | 5 | 2.17 | 1.03 |
| Competence in Instructional Technology | 170 | 1 | 4 | 2.54 | .74 |
| PORGI (Organizational Innovativeness) | 169 | 53 | 174 | 118.42 | 26.26 |
| Personal Innovativeness | 168 | 76 | 140 | 111.00 | 12.95 |
| I believe that distance education can improve education in South Dakota | 169 | 2 | 6 | 5.17 | .78 |
| My school is ready to become involved in distance education | 164 | 1 | 6 | 4.55 | 1.23 |
| I know a great deal about distance education projects in South Dakota | 169 | 1 | 6 | 3.00 | 1.41 |
| Interactive television will provide learners with many valuable experiences | 167 | 2 | 6 | 5.07 | .73 |
| I personally want to be involved in distance education activities | 169 | 1 | 6 | 5.06 | .94 |
| Staff development for educators is necessary in order for distance education to be implemented effectively | 169 | 5 | 6 | 5.90 | .30 |
| My educational colleagues are supportive of the idea of distance education | 166 | 1 | 6 | 3.93 | 1.19 |
| I do not consider myself to be anxious when using or considering the use of new technologies, such as the computer, World-Wide-Web, or instructional television | 169 | 1 | 6 | 4.08 | 1.70 |

Note: higher scores indicate more positive responses; 1 = strongly disagree and 6 = strongly agree)

Table 1b: Questionnaire – Randomly Selected South Dakota Teachers

Descriptive Statistics

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Age | 49 | 26 | 60 | 44.33 | 9.62 |
| Years in Education | 49 | 1 | 39 | 17.20 | 9.34 |
| Experience in Distance Education | 49 | 1 | 4 | 2.18 | .86 |
| Competence in Instructional Technology | 49 | 1 | 3 | 2.10 | .65 |
| PORGI | 48 | 56 | 179 | 124.79 | 25.56 |
| Innovativeness | 48 | 81 | 135 | 108.08 | 12.88 |
| I believe that distance education can improve education in South Dakota | 49 | 1 | 6 | 4.73 | 1.06 |
| My school is ready to become involved in distance education | 49 | 2 | 6 | 4.41 | 1.15 |
| I know a great deal about distance education projects in South Dakota | 49 | 1 | 5 | 2.69 | 1.31 |
| Interactive television will provide learners with many valuable experiences | 49 | 1 | 6 | 4.45 | 1.08 |
| I personally want to be involved in distance education activities | 49 | 1 | 6 | 3.84 | 1.43 |
| Staff development for educators is necessary in order for distance education to be implemented effectively | 49 | 4 | 6 | 5.51 | .62 |
| My educational colleagues are supportive of the idea of distance education | 46 | 2 | 5 | 3.96 | .99 |
| I do not consider myself to be anxious when using or considering the use of new technologies, such as the computer, World-Wide-Web, or instructional television | 48 | 1 | 6 | 3.90 | 1.55 |

Table 1c: Questionnaire: Random Selection of DTL/TTL Academy Teachers

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Age | 209 | 22 | 60 | 41.57 | 9.28 |
| Years in Education | 209 | 1 | 34 | 15.58 | 8.85 |
| Experience in Distance Education | 209 | 1 | 4 | 1.68 | .79 |
| Competence in Instructional Technology | 209 | 1 | 4 | 2.42 | .97 |
| PORGI | 209 | 50 | 170 | 114.24 | 26.53 |
| Innovativeness | 209 | 57 | 139 | 105.51 | 14.28 |
| I believe that distance education can improve education in South Dakota | 209 | 1 | 6 | 4.60 | .93 |
| My school is ready to become involved in distance education | 209 | 1 | 6 | 4.29 | 1.13 |
| I know a great deal about distance education projects in South Dakota | 209 | 1 | 6 | 2.56 | 1.15 |
| Interactive TV will provide learners with many valuable experiences | 209 | 1 | 6 | 4.58 | .90 |
| I personally want to be involved in distance education activities | 209 | 1 | 6 | 3.70 | 1.15 |
| Staff development for educators is necessary in order for distance education to be implemented effectively | 209 | 1 | 6 | 5.40 | .78 |
| My colleagues are supportive of the idea of distance education | 209 | 1 | 6 | 3.79 | .84 |
| I do not consider myself to be anxious when using or considering the use of new technologies, such as the computer, the World-Wide-Web, or instructional television | 209 | 1 | 6 | 3.83 | 1.46 |

Table 1d: Questionnaire: Random Selection of South Dakota Teacher – Post Survey

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Age | 78 | 26 | 61 | 44.38 | 9.40 |
| Years in Education | 78 | 4 | 32 | 17.67 | 8.90 |
| Experience in Distance Education | 78 | 1 | 4 | 2.26 | .87 |
| PORGI (Organizational Innovativeness) | 78 | 53 | 151 | 115.90 | 21.32 |
| Personal Innovativeness | 78 | 78 | 131 | 97.79 | 12.69 |
| I believe that distance education can improve education in South Dakota | 78 | 3 | 6 | 4.69 | 1.02 |
| My school is ready to become involved in distance education | 78 | 1 | 6 | 4.54 | 1.46 |
| I know a great deal about distance education projects in South Dakota | 78 | 1 | 5 | 2.95 | 1.09 |
| Interactive TV will provide learners with many valuable experiences | 78 | 2 | 6 | 4.49 | .96 |
| I personally want to be involved in distance education activities | 78 | 1 | 6 | 3.38 | 1.36 |
| Staff development for educators is necessary in order for distance education to be implemented effectively | 78 | 3 | 6 | 5.44 | .82 |
| My colleagues are supportive of the idea of distance education | 78 | 1 | 6 | 3.95 | 1.14 |
| I do not consider myself to be anxious when using or considering the use of new technologies, such as the computer, the World-Wide-Web, or instructional television | 78 | 1 | 6 | 4.15 | 1.43 |

Note: Higher scores indicate more positive responses: 1 = strongly disagree
6 = strongly agree

Table 2a: Gender of South Dakota Teachers Who Participated In Training

| | Frequency | Percent |
|---|---|---|
| Female | 107 | 62.9 |
| Male | 62 | 36.5 |
| Total | 169 | 99.4 |
| Missing | 1 | .6 |
| Total | 170 | 100.0 |

Table 2b: Gender of Random Selection of South Dakota Teachers

| | Frequency | Percent |
|---|---|---|
| Female | 33 | 67.3 |
| Male | 15 | 30.6 |
| Total | 48 | 98.0 |
| Missing | 1 | 2.0 |
| Total | 49 | 100.0 |

Table 2c: Gender of South Dakota Teachers Who Attended the DDL/TTL

| | Frequency | Percent |
|---|---|---|
| Female | 165 | 78.9 |
| Male | 44 | 21.1 |
| Total | 209 | 100.0 |

Table 2d: Gender of Random Selection of South Dakota Teacher – Post Survey

| | Frequency | Percent |
|---|---|---|
| Female | 62 | 79.5 |
| Male | 16 | 20.5 |
| Total | 78 | 100.0 |

Table 3a: Education Level of South Dakota Teachers Who Participated in Training

| | Frequency | Percent |
|---|---|---|
| BA/BS | 13 | 7.6 |
| BA/BS + 15 | 90 | 52.9 |
| MA/MS | 18 | 10.6 |
| MA/MS + 15 | 39 | 22.9 |
| Doctorate | 10 | 5.9 |
| Total | 170 | 100.0 |

Table 3b: Education Level of Random Selection of South Dakota Teachers

| | Frequency | Percent |
|---|---|---|
| BA/BS | 9 | 18.4 |
| BA/BS + 15 | 20 | 40.8 |
| MA/MS | 6 | 12.2 |
| MA/MS + 15 | 13 | 26.5 |
| Doctorate | 1 | 2.0 |
| Total | 49 | 100.0 |

Table 3c: Education Level of Teachers Who Attended the DDL/TTL

| | Frequency | Percent |
|---|---|---|
| BA/BS | 41 | 19.6 |
| BA/BS + 15 | 109 | 52.2 |
| MA/MS | 27 | 12.9 |
| MA/MS + 15 | 31 | 14.8 |
| Doctorate | 1 | .5 |
| Total | 209 | 100.0 |

Table 4a: Positions of South Dakota Teachers Who Participated in Training

| | Frequency | Percent |
|---|---|---|
| K-12 Teacher | 123 | 72.4 |
| School Administrator | 7 | 4.1 |
| School Library/Media | 2 | 1.2 |
| Higher Education Professor | 15 | 8.8 |
| Other | 23 | 13.5 |
| Total | 170 | 100.0 |

Table 4b: Positions of Random Selection of South Dakota Teachers

| | Frequency | Percent |
|---|---|---|
| K-12 Teacher | 45 | 91.8 |
| School Administrator | 3 | 6.1 |
| Other | 1 | 2.0 |
| Total | 49 | 100.0 |

Table 4c: Positions of Teachers Who Attended the DDL/TTL

| | Frequency | Percent |
|---|---|---|
| K-12 Teacher | 181 | 86.6 |
| School Administrator | 2 | 1.0 |
| School Library/Media | 7 | 3.3 |
| Other | 19 | 9.1 |
| Total | 209 | 100.0 |

Table 4d: Positions of Random Selection of South Dakota Teachers – Post Survey

| | Frequency | Percent |
|---|---|---|
| K-12 Teacher | 60 | 76.9 |
| School Administrator | 2 | 2.6 |
| School Library/Media | 2 | 2.6 |
| Other | 14 | 17.9 |
| Total | 78 | 100.0 |

Table 5a: PC Ownership of South Dakota Teachers Who Participated In Training

| | Frequency | Percent |
|---|---|---|
| Yes | 151 | 88.8 |
| No | 19 | 11.2 |
| Total | 170 | 100.0 |

Table 5b: PC Ownership of Random Selection of South Dakota Teachers

| | Frequency | Percent |
|---|---|---|
| Yes | 36 | 73.5 |
| No | 13 | 26.5 |
| Total | 49 | 100.0 |

Table 5c: PC Ownership of Teachers Who Attended the DDL/TTL

| | Frequency | Percent |
|---|---|---|
| Yes | 156 | 74.6 |
| No | 53 | 25.4 |
| Total | 209 | 100.0 |

Table 5d: PC Ownership of Random Selection of South Dakota Teachers – Post Survey

| | Frequency | Percent |
|---|---|---|
| Yes | 72 | 92.3 |
| No | 6 | 7.7 |
| Total | 78 | 100.0 |

Table 6a: Innovativeness of South Dakota Teachers Who Participated in Training

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 168 | 76 | 140 | 111.00 | 12.95 |

Table 6b: Innovativeness of Random Selection of South Dakota Teachers

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 48 | 81 | 135 | 108.08 | 12.88 |

Table 6c: Innovativeness of Teachers Who Attended the DDL/TTL

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 209 | 57 | 139 | 105.51 | 14.28 |

Table 6d: Innovativeness of Random Selection of South Dakota Teachers – Post Survey

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 78 | 78 | 131 | 97.79 | 12.69 |

Note: Higher scores = higher levels of innovativeness (National Average =~105)

Table 7a: Perceived Organizational Innovativeness of South Dakota Teachers Who Participated in Training

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 169 | 53 | 174 | 118.42 | 26.26 |

Table 7b: Perceived Organizational Innovativeness of Random Selection of South Dakota Teachers

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 48 | 56 | 179 | 124.79 | 25.56 |

Table 7c: Perceived Organizational Innovativeness of Teachers Who Attended the DDL/TTL

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 209 | 50 | 170 | 114.24 | 26.53 |

Table 7d: Perceived Organizational Innovativeness of Random Selection of South Dakota Teachers – Post Survey

| N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|
| 78 | 53 | 151 | 115.90 | 21.32 |

Note: Higher scores = higher levels of perceived organizational innovativeness (National average =~114)

Table 8a: Innovativeness of South Dakota Teachers Who Participated in Training

| Education Level | Mean | N | Std. Deviation |
|---|---|---|---|
| BA/BS | 105.69 | 13 | 12.18 |
| BA/BS + 15 | 109.94 | 90 | 12.78 |
| MA/MS | 113.44 | 16 | 13.44 |
| MA/MS + 15 | 113.85 | 39 | 13.17 |
| Doctorate | 112.40 | 10 | 12.95 |
| Total | 111.00 | 168 | 12.95 |

Table 8b: Innovativeness and Educational Level of Random Selection of South Dakota Teachers

| Education Level | Mean | N | Std. Deviation |
|---|---|---|---|
| BA/BS | 108.67 | 9 | 12.88 |
| BA/BS + 15 | 105.85 | 20 | 14.90 |
| MA/MS | 108.33 | 6 | 7.74 |
| MA/MS + 15 | 112.08 | 12 | 11.90 |
| Doctorate | 98.00 | 1 | . |
| Total | 108.08 | 48 | 12.88 |

Table 8c: Innovativeness of Teachers Who Attended the DDL/TTL

| Education Level | Mean | N | Std. Deviation |
|---|---|---|---|
| BA/BS | 107.41 | 41 | 14.64 |
| BA/BS + 15 | 102.59 | 109 | 13.99 |
| MA/MS | 108.07 | 27 | 14.79 |
| MA/MS + 15 | 111.10 | 31 | 12.66 |
| Doctorate | 103.00 | 1 | . |
| Total | 105.51 | 209 | 14.28 |

Table 9a: The Innovator Emulated by South Dakota Teachers Who Participated in Training

| | Frequency | Percent |
|---|---|---|
| Principal | 11 | 6.5 |
| Other Administrator | 25 | 14.7 |
| Library Media Specialist | 6 | 3.5 |
| Classroom Teacher | 61 | 35.9 |
| Special Teacher | 6 | 3.5 |
| Someone Else | 47 | 27.6 |
| Total | 156 | 91.8 |
| Missing | 14 | 8.2 |
| Total | 170 | 100.0 |

Table 9b: The Innovator Emulated by Random Selection of South Dakota Teachers

| | Frequency | Percent |
|---|---|---|
| Principal | 13 | 26.5 |
| Other Administrator | 2 | 4.1 |
| Library Media Specialist | 3 | 6.1 |
| Classroom Teacher | 18 | 36.7 |
| Special Teacher | 3 | 6.1 |
| Someone Else | 5 | 10.2 |
| Total | 44 | 89.8 |
| Missing | 5 | 10.2 |
| Total | 49 | 100.0 |

Table 10c: Educator Emulated by Teachers Who Attended the DDT/TTL

| | Frequency | Percent |
|---|---|---|
| Principal | 17 | 8.1 |
| Other Administrator | 9 | 4.3 |
| Library Media Specialist | 48 | 23.0 |
| Classroom Teacher | 82 | 39.2 |
| Special Teacher | 28 | 13.4 |
| Someone Else | 24 | 11.5 |
| Total | 208 | 99.5 |
| Missing | 1 | .5 |
| Total | 209 | 100.0 |

Table 10d: Educator Emulated by Random Selection of South Dakota Teachers – Post Survey

| | Frequency | Percent |
|---|---|---|
| Principal | 4 | 5.1 |
| Other Administrator | 2 | 2.6 |
| Library Media Specialist | 8 | 10.3 |
| Classroom Teacher | 50 | 64.1 |
| Special Teacher | 4 | 5.1 |
| Someone Else | 10 | 12.8 |
| Total | 78 | |

Comments from Teachers
Post - Random Survey – spring 2003

Distance education is a band-aid that does not address the core problems with education. Until districts are properly funded classes will be overloaded, budgets cut to the bone, and teachers will be underpaid. Improve funding and teachers will go to remote districts making distance education unnecessary.

It is not the greatest way to learn, but if a rural school district can not get the classes students need it is better than not having the class at all.

Interaction is not great. There is delayed reaction and students give up trying to talk to the teacher.

I am a facilitator in a distance education class. I think opportunities for distance education are valuable only if a qualified teacher is not available locally. The class I facilitate goes at a much slower pace than the majority. Students who struggle seem to have even more difficult time than in traditional classes.

I think it is an excellent idea; however, I believe teachers will need more preparation time and training in order to be effective.

I feel that distance education is amazing and could be very beneficial for improving education. I do think we could implement it more in our state.

I do not believe it is effective for special education on a daily basis, although occasional uses could enhance the program.

In regular classrooms I believe a live teacher in the classroom is best.

I have seen teachers who are frustrated by logistical difficulties. Students in other schools are sometimes not supervised and there are calendar conflicts.

I have attended meetings using the distance education equipment. Using this technology for communication is difficult because it (cameras, microphones, screens) tends to stifle open communication. Speakers are generally self conscious and reluctant to pursue issues. Listeners are aware and self-conscious about the microphones and cameras. In general, conversations using this mode are stilted and cramped. The ability to read non-verbal communication is also hampered.

I have taken 10+ credits over the Internet, using WebCt. The instructors have tried several different approaches to make the class as interactive as possible. We have groups that read and respond to each other regularly. Comparing that process to face-to-face discussions puts electronic communications at a great disadvantage.

There is a real lack of information or difficulty in finding information about distance learning opportunities.

It is difficult to picture how distance education will work in the elementary school. I believe in distance education only if students are still getting socialization skills in other ways. Communication is vitally important and it is not always easy to communicate effectively through computer media sources. I worry about not getting to know people as individuals and just thinking of them as numbers.

Distance Education is contradictory to the consolidation philosophy that I think is badly needed in this state, particularly being short of money.

I feel courses offered should not replace existing teachers or course offerings in schools. They should enhance educational opportunities. French is available to our students only via distance learning. However, we do have a Spanish teacher and Spanish is being offered by television and this could prompt a cut in duties in these tight budget times. I know some teachers have lost their positions because a television teacher could serve their students.

I would like to see more opportunities for my grade level (K).

Access is needed not just at the district level, but at the building level. The logistics of getting to the site aren't conducive to participating in DDN sessions very often.

I believe that distance education can be utilized and be very effective. We must realize a few things along the way:

1. Just like in the regular classroom some students will not learn well through this medium.
2. Some students feel the teacher at the other end is being rude, when actually time becomes a factor.
3. Teachers like myself who have a young family teach four or five different preps simply may not have time to participate.
4. Due to personal reasons I have not yet attended a DDN workshop. I would like to spend at least an entire week learning the process.

Offer more grants to get teachers involved – so they feel compensated for taking the risk.

I think it is distance education is great! I wish I had some experience with it.

APPENDIX E – SUPERINTENDENT'S INTERVIEW RESULTS

Telephone Interview Script for South Dakota School Superintendent Interviews

Fifteen school superintendents (14 males and 1 female) were called for potential interviews. The interviews lasted approximately 10 minutes. The calls were made in March 2003.

***Begin the interview with:***

Hello, my name is _____ and I am a graduate student at Nova Southeastern University.

I am doing some research on the Digital Dakota Network.

I am calling all superintendents who permitted site visits to their schools last year. With your permission, I would like to ask you a few questions. Is that OK? All information discussed is confidential. All information collected will be included in an anonymous report.

Is this a good time or may I call you back at a more convenient time?

If needed, say again, all information collected is confidential and will be included in an anonymous report.

***Use the question data sheets:***

***End of Interview with:***

Do you have any questions for me?
Thank you for taking the time to discuss the Digital Dakota Network.

Telephone Interview Responses of school superintendents – Question 1

**1. The Digital Dakota Network is an important idea and there is a great deal of interest in it. What do you feel is the superintendent's role [your role] concerning the DDN?**

**(perception of role)**

- My role is to work with the technology coordinator to make sure that the DDN is working. The technology coordinator handles all aspects of the Network. I couldn't tell you what classes we use it for right now.

- I support the staff and provided the financial resources to keep it going. We receive classes, but do not deliver any over the DDN. Our school can still provide the basic curricula; we receive advanced courses like Spanish and also Algebra. The tuition is prohibiting in some ways. It cost $200.00 per student to take courses over the Network.

- I see my role as offering opportunities that don't exist in our district. Other classes they [the students] do over the DDN offer a wide variety of opportunities. We can't hire the teachers that could teach it here.

- My role is the promotion of the DDN and any support I can give… I try to create a climate of willingness. We don't deliver any courses, just receive-some university classes and from other schools.

- Ensuring that there is one [a Network] and that it is available. I make sure the equipment is working and I have done some scheduling. We don't teach courses over the DDN, we receive. There is a consortium of 8 to 9 schools that share classes.

- I lead the DDN in the school district. We use 7 courses of the 14 offered recently. It is the delivery method of the future and we would not be an accredited school without it [DDN]. None of our teachers teach over the Network. Classes at the top of the list are Applied Math II, German, and Driver's Ed. Art I and II are needed. We belong to the North West Schools cooperative and have heard about a plan of sharing or expanding with schools in Massachusetts and Florida. We need a second system for elementary and junior high; also kindergarten could make use of it. We see a change over the years, teaching to a younger group, for example, teaching Algebra to 6th, 7th and 8$^{th}$ graders. We need to think about consolidation and think about distance education as a new method of teaching.

- I do several things regarding the DDN. I am the main technology advocate. I set the vision for the use of the Network. I support technology for teaching and make decisions about the use of the DDN…main communicator to the

Board and write policies for the school. I look at the DDN as a resource to education in our school district.

- I see my role as mainly providing teachers the resources to use it.

- To organize the classes offered to students and encourage staff to take classes for professional development. I make sure that there is adequate funding for the DDN. We have one teacher trained in using the Network, but we receive from other South Dakota schools. I encourage our teachers to use it if they want to.

- I am on the State Board of Education so I have a great interest in distance education. I see myself having several roles. As superintendent, I want to have a wide variety of offerings and to expand course offerings. Some offerings would not be available without the DDN. More will happen over time. …and we need to see more opportunities for children. I see this as a way to increase the quality of education. Need to be connected so that we can connect to the medical field South Valley Satellite. There is another network, the DIL/ILC (?) that offers 3 courses. We need to see if all these networks can connect to each other. Right now we have I person trained to teach, but does not, we bring in classes.

- I make sure there is media support. We have not used the DDN very much…use the SIDLL the most, since 1997. The DDN is used when the classes are not available through DIDLL. The SIDLL is a separate closed network; we often wanted to know if the DIDLL can interface with the DDN. Like the SIDLL because the 12 school districts decide what it is that needs to be taught.

Telephone Interview Responses of school superintendents – Question 2

**2. What does your school district do to promote the DDN? / What would motivate your teachers to use the DDN?**

**(motivation to use distance education)**

- Well, we are trying to find a way to get elementary staff to teach science. Meetings are a good way to start getting staff to use it. We also invite the community to use the Network.

- We promote it by looking at courses we don't offer. In terms of students, they are self-motivated because it adds to their regular school workloads. Can carry credit into high school. It is success for success sake and students encourage other students.

- We try to motivate teachers and students to use it by encouraging them to see what it has to offer. For example, Spanish II is available over the DDN and

ACT prep can be taken by students. The principal really pushes the DDN. I try to get teachers to have meetings and I conduct my teacher meetings through the Network. Also, for the community, we now teach parenting classes, I think 3 teachers teach it.

- Motivation seems to come by identifying needs and prioritizing what we could not do locally. Some things that would motivate us would be advanced courses, for example Spanish I is not needed, but Spanish IV is really needed. We have some teachers who are motivated to use it because of the things we can bring into the school, for example, legislative sessions in the elementary grades and some other governmental events. These were motivated by a teacher with previous DDN experience.

- In terms of promoting the DDN, time and money. There is a commitment factor to teaching by distance. It is time consuming. …an increase in preparation time and need for support at other locations. Right now other responsibilities are not decreased, so it is an additional load to the teacher. With the DDN there are more students to worry about, more locations, and an increased load for corrections [tests] and preparations. A substantial stipend may be a motivator.

- Money is a motivating factor. We are looking at increasing the stipend in 2003, with another increase in 2004, $1500.00, then, $2500.00 respectively. We benefit from receiving courses from like Advanced Literature, Spanish III and Art classes. The U.S. History course is one we could not offer here, so it is a good reason to use the DDN.

- We are trying to build up the skills of our teachers by giving them as much technology support as possible. We try to provide skills to utilize technology. Technology is part of their development plan. Teachers can get a special deal on purchasing a PC for their home and we ensure that they are connected and can fully access the school network from home. 85% of the teachers are connected from home. We have hosted technology-training sessions. We survey teachers and find ways to integrate technology and education.

- Time and money would be motivating. Providing an extra class period. Paying more to teach the class. With declining enrollment and the financial situation, it is hard to pay teachers more money.

- It is really needs based and the need to pay staff extra money to teach a distance class. We are a small school so we benefit from senior math, foreign language and business courses.

- We survey the kids and see the need. The registration period for 2003-04 motivated us to look at what we needed. We don't use the Network a lot

because we have staff that can teach most of our courses. Foreign language is most needed.

- A stipend for teaching would motivate. The ability to have electives such as home economic and foreign language would be motivating.

Telephone Interview Responses of school superintendents – Question 3

**2. What would you like to see the DDN used for?**

**(vision of distance education)**

- Maybe if we had more meetings, staff would get used to it. Would like to invite the community to use it more.

- We are 200 miles from another school district. Would like to see the DDN used for more specialized education training for teachers.

- Home schooling is an option.

- Other than what we discussed, don't know. Staff development maybe.

- We are currently delivering high school classes, would like to see K-3 usage for Spanish. In the future, would like both students and teachers see its value. Rural teachers can use it for meetings to share ideas, for example, we are trying to get rural teachers in 1-2-3 room schools to meet once a month to share ideas and support each other. Professional development is very important and the DDN should be used for teacher education.

- You may or may not know this but the east side of the state has more people than the west side of the river. I don't think the east side is using it much. The west side of the river will need to use distance education even more in the future. And pre-school and kindergarten could benefit from distance education.

- We currently do not receive or deliver courses over the DDN. Staff development would be a use. I know the community uses it.

- We would like to receive more classes at the advanced levels.

- Meetings. Special interest classes, like ACT and class reviews. One-day special interest programs for staff. Like to use it for community meeting with other towns.

- I starting using it for Superintendent Association Board meetings and it works very well. So, I would say meetings. The west side of the river is very sparse

so having meeting over the DDN would save 2-3-4 hour drives. It will take time; there will be increased use once all the glitches are ironed out.

- Someone said the DDN could interface with the other networks. I could see more uses if that would happen. Maybe college classes in the evenings.

Telephone Interview Responses of school superintendents – Question 4

**3. There is a lot of discussion about the declining population in South Dakota. How do teachers in your school district get information about student population trends in South Dakota?**

**(impact of external factors)**

- We are in a building phase, so a study was done regarding census and population trends. It was available to the public and I shared it with the teachers. The trends are recorded for the next 10-12 years.

- Well, right now we have a stabilized student population. I provide information to the staff once a month and what it means to each school. We will probably have 5th and 6th grade combinations as a result of declining census. I don't see the DDN as a survival mechanism for the K-8 system.

- To be frank and honest, this is my 8th year as a superintendent. I see our census as good for the next several years. Staff at our school receives census information on a regular basis. …Retirement has reduced the teacher numbers. In terms of the DDN, younger teachers like that method of delivery; it seems that the older ones don't like it. The younger ones perceive distance education as the wave of the future. One teacher loves the DDN and is very good with the 1-1 interaction over the video. I see the DDN as good for the future for class offerings as we loose teachers and for home schooling.

- I provide the staff with school population trends. However, there is a lot of media coverage statewide on this issue.

- I give information to the teachers directly and have done presentations to the teachers, school board, and the public. The census or cuts in spending is not a surprise to any one.

- In the high school system we compile reports and have projects 5 years out. It looks like our census will grow over the next few years; we just had an increase of 5 students through a job transfer. If anything, 8th graders may go to another school. We depend on agriculture and agriculture is based on the weather. We had a drought that is not the normal pattern. This may affect movement from our school district.

- In the last two years, our school participated in a school facility study. In the last 3 censuses, we projected enrollment and did some estimates that will help

us make some decisions. This was shared with the teachers at a winter retreat. The information was disseminated within the district. We are very affected by declining enrollment.

- We share enrollment trends with staff regularly.

- We share census and enrollment trends and projections with staff and students.

- We have a lot of discussions about projections in staff meetings and public meetings. We are depopulated (?). …Frequently discussing options…cutting, consolidation…asking taxpayers…opting out…increasing taxes or levies. There are certain realities to the census. Distance education does factor into the equation and adds flexibility like adding only part of a staff, you know, an FTE of .5 or .3 or .2 instead of full-time.

- We give information to staff and the public about our projections.

Figure 1
*Interview: Perception of Superintendent's Role – Question 1**

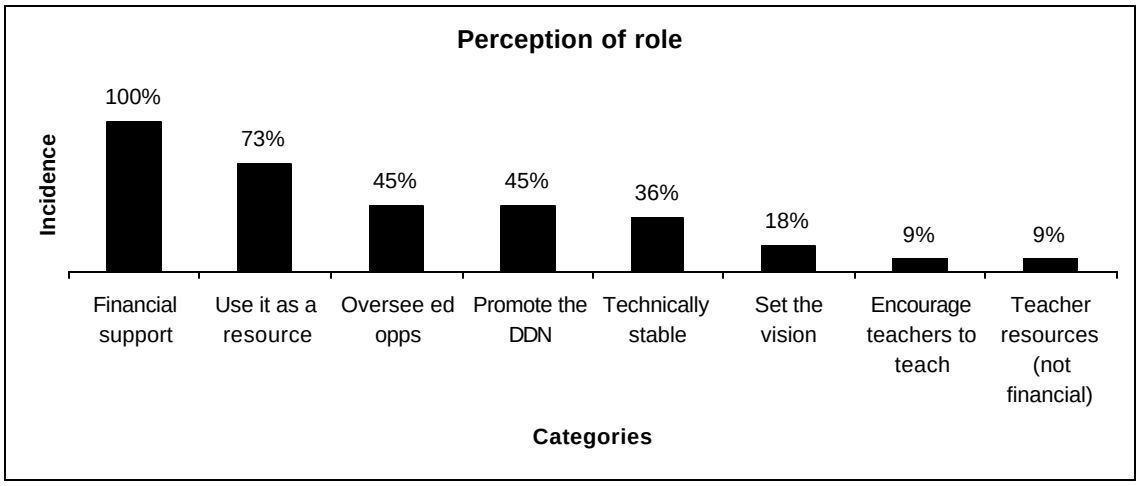



Figure 2
*Interview: Motivation to Use Distance Education – Question 2**

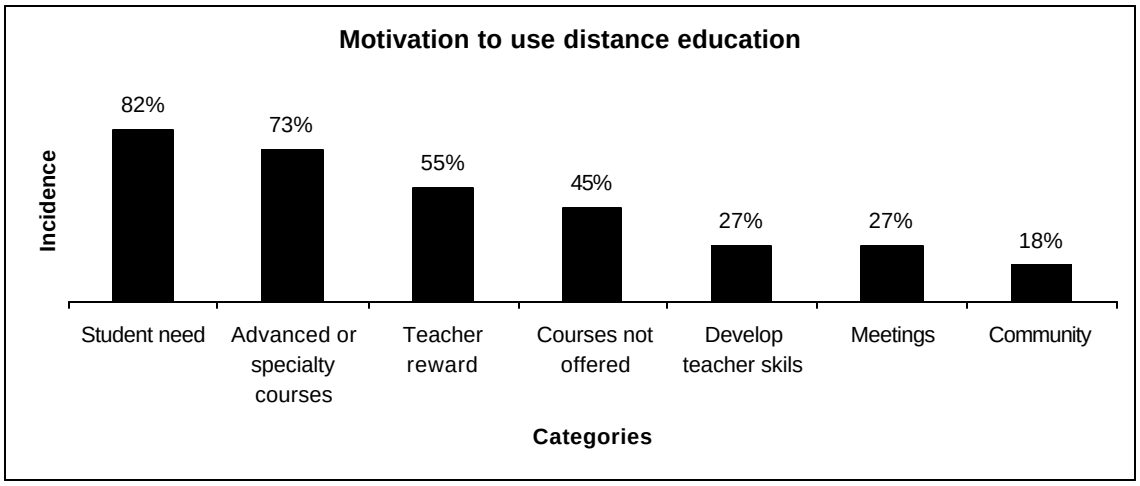
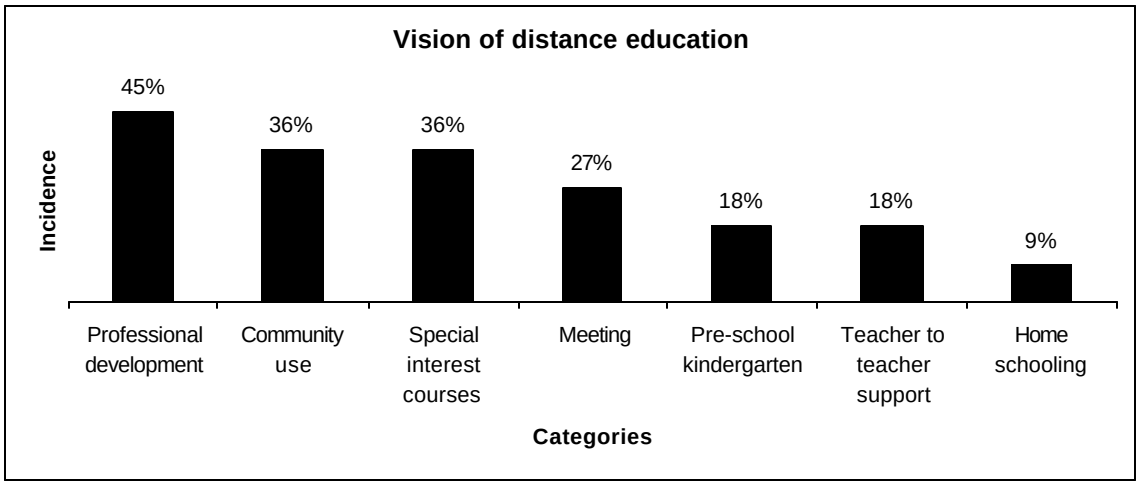
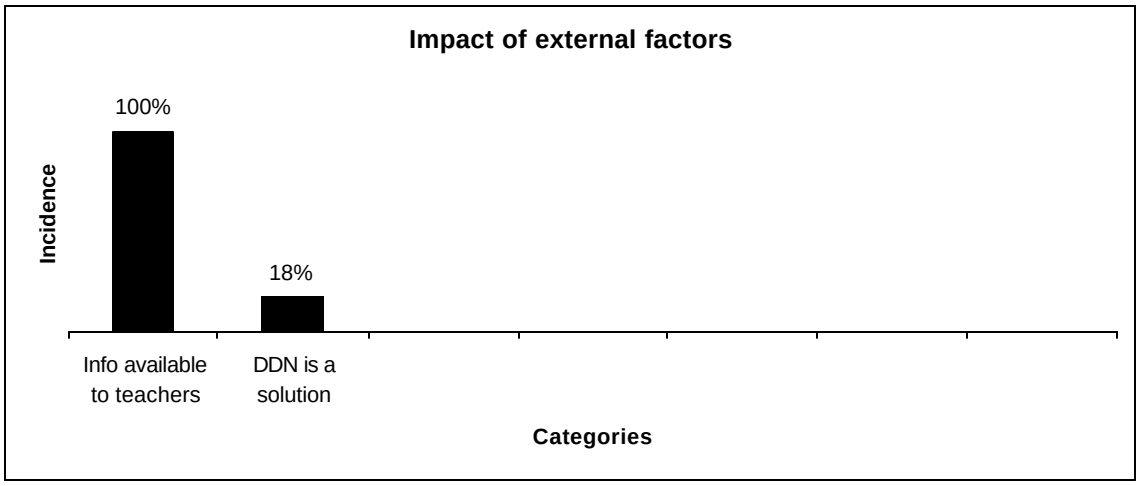


Figure 3

*Vision of distance education – Question 3**




*Impact of external factors – Question 4**



APPENDIX F – EVALUATION TEAM MEMBERS

Michael Simonson has authored four major textbooks dealing with instructional technology, instructional computing, instructional media, and distance education. He has over 50 scholarly publications, in excess of 100 professional presentations, as well as having written successful grants totaling over $4 million. He has considerable experience working with businesses and corporations in their technology planning and utilization, including the U. S. Navy's Surface Warfare Officers School, the US West Foundation, the W. W. Kellogg Foundation, and the US Department of Education. He is editor of the Quarterly Review of Distance Education and is founder and editor for 21 years of the Proceedings of Selected Research and Development Papers Presented at the Annual Convention of the Association for Educational Communications and Technology. In 1997, he was awarded the "Most Significant Advancement in Research in the field of Distance Learning", presented by the United States Distance Learning Association.

Steve Wheeler has worked in media, education and training for over 27 years, predominantly in nurse education and teacher training. From 1996-1998 he was employed by RATIO (Rural Area Training and Information Opportunities) - a £5 million European Union project that established 40 distance learning centers throughout South Western rural England to support the economic development of small businesses. During this time Steve managed the technology rollout and training developments for the project. He was also involved in the successful bid to secure a further £13 million ADAPT European funds to develop the distance training portfolio further. More recently he was a national evaluator for the European funded UK wide EURONET project and has recently performed a similar role for the SANTTSUR project that trains surgeons at a distance in hospitals across the UK and Ireland. Steve is now Senior Lecturer in Distance Education at the University of Plymouth, where he develops strategic initiatives for distance

delivery of post-graduate degree modules. His work involves research, development and online teaching and assessment. His current research interests include telematic delivery and support methods, cost benefits analysis of technologies, individual differences in learning and motivation, and the psychological and social impact of distance education on individuals and communities. Steve is a member of the editorial boards of four international journals, and a member of the organizing committees for several international conferences and symposia. He is regularly invited to present his research at international events across Europe and the United States and has published in a number of high profile journals including British Computer Society journals (9 articles), Educational Media International, the Quarterly Review of Distance Education (2 articles), Tech Trends, the International Journal of Engineering Education, the Journal of Educational Media and the Journal of Computer Assisted Learning. He holds a first class honors degree in psychology from the UK Open University, and researched into the logistics and benefits of satellite television education during his teacher training. He is a graduate member of the British Psychological Society and a UK representative of UNESCO's IFIP Scientific Group on Distance Learning. He has a Masters level qualification in research methods and is in the final stages of his PhD entitled: Transactional Distance and the Mediating Effects of Distance Learning through Telematics. Steve is married with three school age children and lives in Plymouth, South West England.

Mark Hawkes is Director of Graduate Studies in Educational Technology and Assistant Professor in the College of Education at Dakota State University. Mark holds a Ph.D. from Syracuse University. His previous work included several years at the North Central Regional Educational Laboratory as a researcher in the Evaluation and Policy Information Center, and specialist in Syracuse University's Center for Instructional Design. He has led and participated in a number of district and statewide evaluations of educational technology fueling his research interests in the outcomes of educational technology application on student learning and teacher professional development. Recent publications have appeared in American School Board Journal, Technology Horizons in Education Journal, Phi Delta Kappan Educational Technology, and Journal of Research on Computing in Education. Mark also serves as Vice President of Evaluation in the Society of Instructional Technology in Education (SITE), and the Chair of the American Evaluation Association (AEA) topical interest group in distance education.

Gloria Steele, an education/technology consultant specializing in Web-based learning and the evaluation of technology integration in schools, has spent her career working with rural schools. She has served in an advisory capacity for the Milken Foundation, Girls Incorporated Teaching Smart Program, and the Microsoft K-12 Educator Program. She is a recent contributor to the DIGOPP Online Working Group, sponsored by the Markle Foundation to examine the relationship between digital divide issues and development policies, poverty reduction and reduction of inequalities at the global level. The work of this group shaped the findings and recommendations of the Digital Opportunity Task for their report to the G-8 Summit, summer of 2001. She is also a contributor to the development of the national Technology Standards for School Administrators Project, participating in the International Society for Technology in Education (ISTE)

Washington, DC Leadership Forum and the ISTE Leadership 2001 Symposium, Chicago, IL. As an Education/Technology Specialist with the Technology & Innovations in Education Office, Gloria has developed pilot research projects through grants and support from the North Central Regional Technology in Education Consortia (NCRTEC), the High Plains Regional Technology in Education Consortia (HPRTEC) and the Mid-Central Regional Education Laboratory (McREL). Discover South Dakota, a fourth grade web-based curriculum project was developed with educators and partners across states. She has served as project manager and development team leader for this innovative model. The model features student participation in tele-collaborative learning, a blended model of professional development for teachers, and a problem based, just in time professional development delivery model for school leaders. Discover South Dakota has served as a catalyst for web-based and video based curriculum development in South Dakota. Current research and development projects include web- based dissemination products for designing and leading tele-collaborative learning and the integration of Systems Thinking Tools into the DSD student curriculum. Gloria is an evaluation team member for the Learning Organizations for Technology Integration (LOFTI), U.S. Department of Education Technology Challenge Grant, where her evaluation work focuses on whole systems change and technology integration in participating school districts. As a member of the North Dakota/South Dakota evaluation task force, she is involved in the development of a statewide technology assessment framework. She was a participant in the Illinois Next Steps Project, a statewide initiative for scaling up technology evaluation processes. She is an Innovation University Fellow, participating in site visits and programs throughout the United States and internationally to study organizations whose innovative values, thinking and practices have created sustained success.

Ron Senne conducts educational program evaluation work for k-12 and higher education educational organizations and consortiums. He has served as the lead evaluator and a collaborative team member in technology challenge and technology literacy grants funded by the U.S. DOE. In addition, Ron has provided internal evaluation and organizational development services for numerous organizations in the fields of education and human services. Ron and his family live in Vermillion, SD.

Shirley Walrod comes from a diverse background including K-12 education, higher education, newspaper editing and publishing, photojournalism, and professional photography. Her experience with program evaluation grew from two years of work on the Iowa Star Schools Project at Iowa State University, Ames, where she earned a Masters Degree in Education. Presently she is completing her dissertation on Competency-Based Medical Curriculum and graduated in 2002 with a Ph.D. in Education, Curriculum and Instructional Technology, from ISU. She is employed by Des Moines University Osteopathic Medical Center as an instructional designer, researcher, and instructor in education for the Health Management Master's Program. Native Iowans, Shirley and husband Ron have been married 33 years and have a son, Ryan, a senior at ISU in theater, and a daughter, Rhonda, a junior at ISU, in business. They live in Boone, Iowa.

Joanne Ustad is a graduate assistant enrolled in the Masters of Educational Technology degree program at Dakota State University. She graduated from South Dakota State University with a degree in Ag Business. After working in a variety of business and political offices, she obtained her teaching certificate from Dakota State University. She taught computer classes at Turn About, the alternative school in Sioux Falls, SD for one year. Joanne taught business and computer classes at Madison High School in Madison, SD for seven years. In this position, she co-chaired the North Central Association steering committee directing school improvement goals. She also served on the Technology and School-To-Work committees. She advised the yearbook and the Future Business Leaders of America at MHS. Her family includes her husband, Mel and two sons. She enjoys watching the boys' activities, playing golf and volleyball.

Sandy Krage is a graduate student in the Master of Science in Educational Technology at Dakota State. She has taught all age levels and a variety of subjects primarily in SD for a number of years and, most recently, was an art teacher and librarian at a local Christian school. At that school she also had a number of technology related responsibilities. In addition to the SDADE evaluation project, she is currently substitute teaching and doing a few projects with a distance education related portion. One of those projects is a virtual tour of the Mitchell Prehistoric Indian Village and includes an "Understanding by Design" SD history lesson plan. The web site is http://www.lofti.dsu.edu/piv. The students in the independent study art class she is teaching have digital photos of their work e-mailed to her in between her biweekly day with them. They are currently working on a mural on a wall in the all-purpose room. Sandy's parents are still in Washington where she was born and raised, and one sister is in California so she still gets to enjoy the mountains and ocean on occasion. Since her other sister is on the east coast, She has seen the cherry trees in blossom in D.C. and visited several Civil War battlefields.

Judy Converso is a researcher for the Learning Systems Institute at Florida State University in Tallahassee, FL. She has a Ph.D. in Instructional Systems from Florida State. Judy works with the evaluation team as a statistical analyst and as a qualitative evaluation specialist.

Margaret Crawford is an Information Specialist for the Mason City Public Schools, Mason City, Iowa. She works with the evaluation team to prepare documents and edits publications of the evaluation project. She has a M.S. in instructional technology, and a B.S. as a school library/media specialist.

Second Tier Evaluators

Susan Zvacek is the team leader for the second tier evaluation. She holds a Ph.D. from Iowa State University and is Director of Distance Education from the University of Kansas. She is a nationally known speaker and writer on distance education, especially on the organization and delivery of instruction to distant learners.

Gary Brown is a Distance Learning/Senior Technology Specialist for the Broward County Florida Public Schools. He works for educational technology services and has

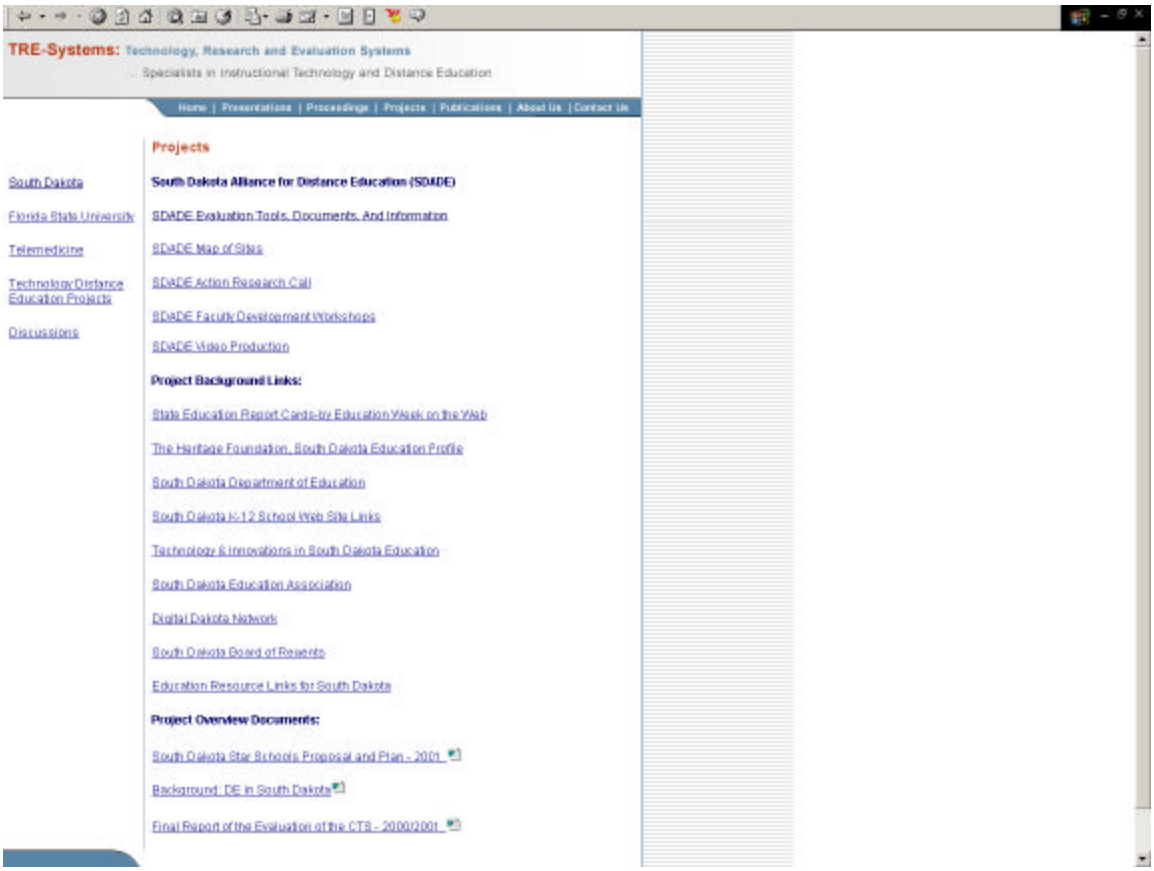
considerable experience establishing and maintaining large comprehensive distance learning systems. His doctorate is from Nova Southeastern University.

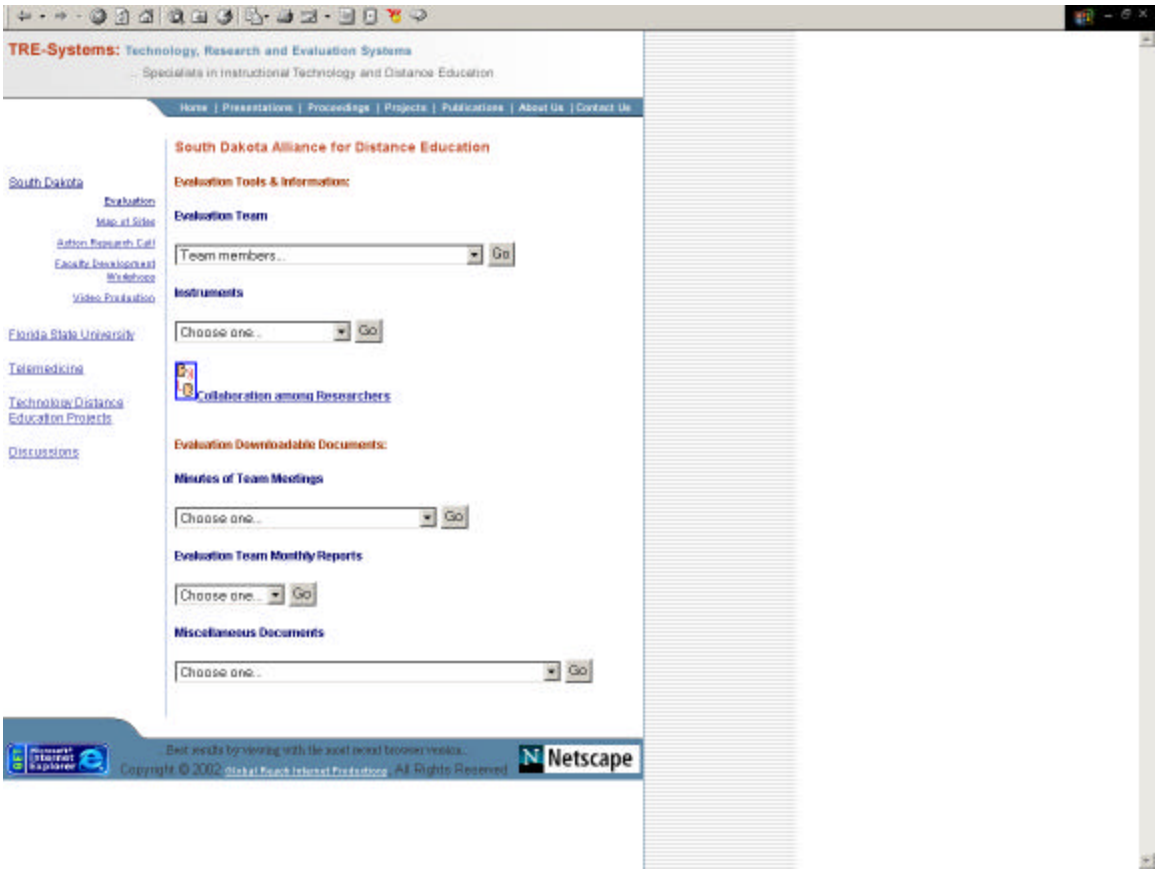
Nancy Maushak is an Associate Professor of Curriculum and Instruction from Texas Tech University. She is a well-known speaker and writer with considerable experience on the evaluation of distance education systems. Her Ph.D. is from Iowa State University.

APPENDIX G – EVALUATION WEB SITE

www.tresystems/projects/alliance

These pages are representative of the web site used by the evaluation team during the SDADE project. The information contained in and linked to these pages has been sent to the Department of Education for posting.




TRE-Systems: Technology, Research and Evaluation Systems
Specialists in Instructional Technology and Distance Education
Home | Presentations | Proceedings | Projects | Publications | About Us | Contact Us
South Dakota Alliance for Distance Education
South Dakota
Evaluation
Map of Sites
Action Research Call
Faculty Development Workshops
Video Production
Florida State University
Telemedicine
Technology Distance Education Projects
Discussions
Evaluation Tools & Information:
Evaluation Team
Team members...
Go
Instruments
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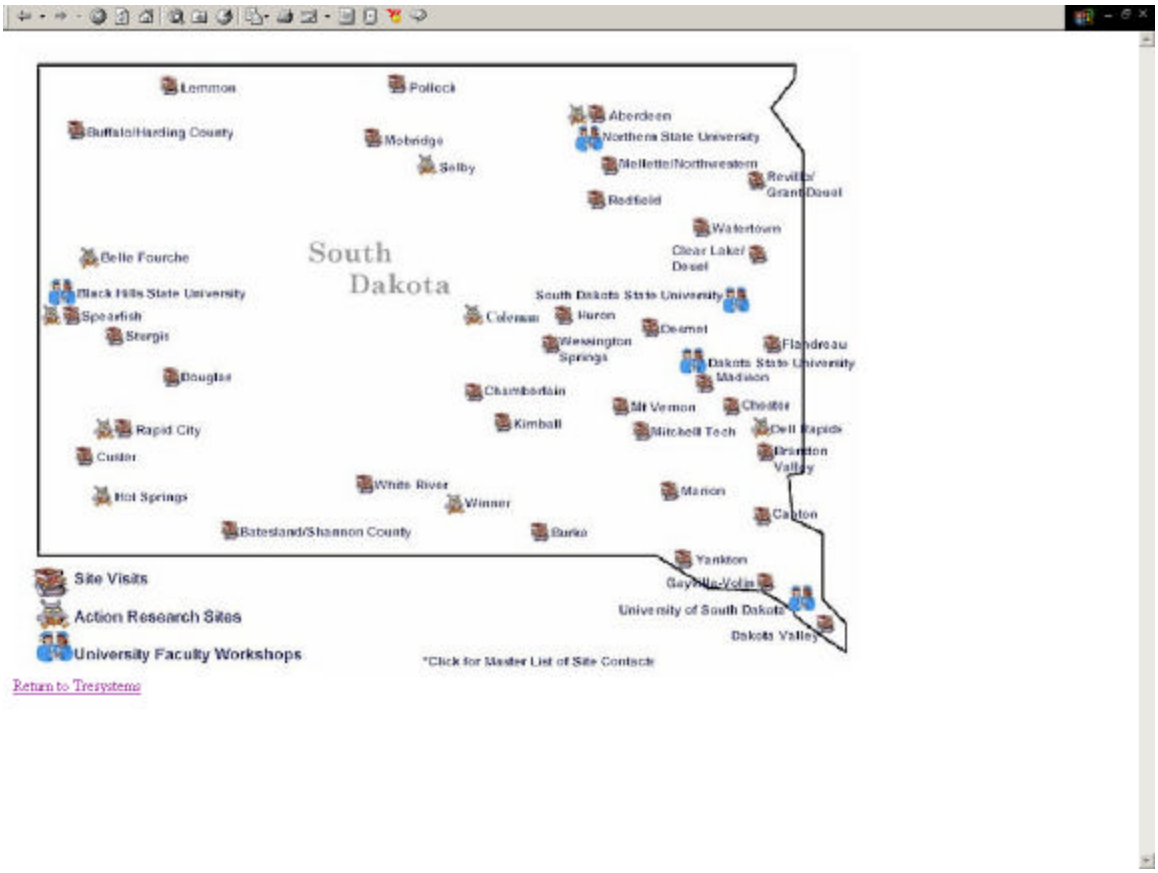


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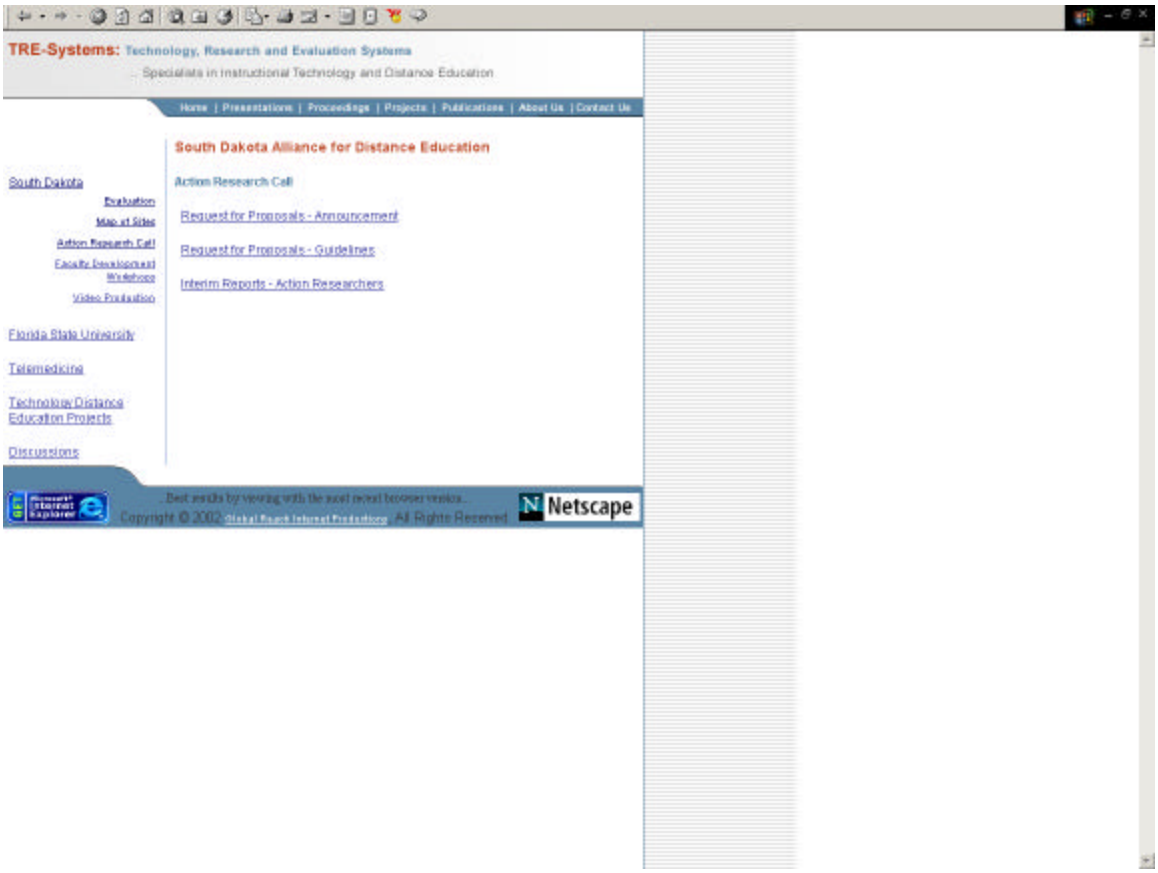
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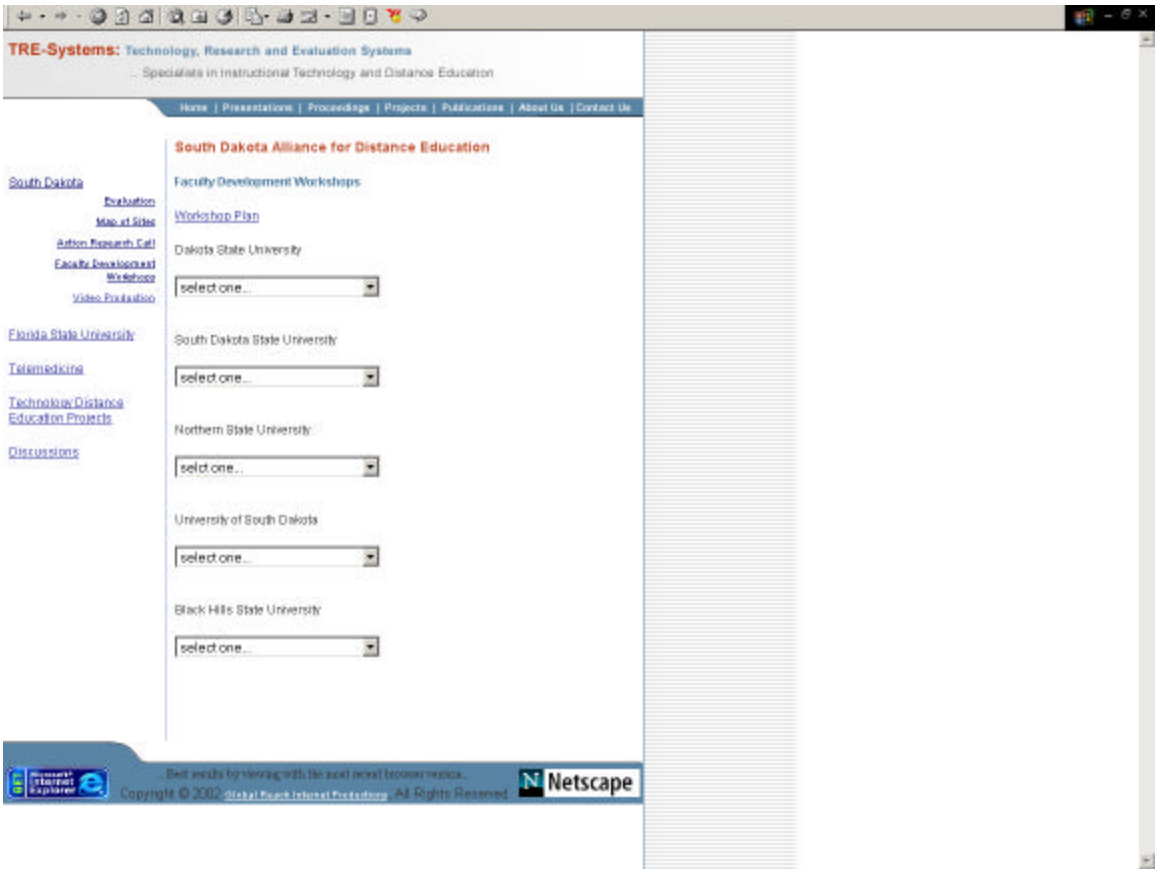
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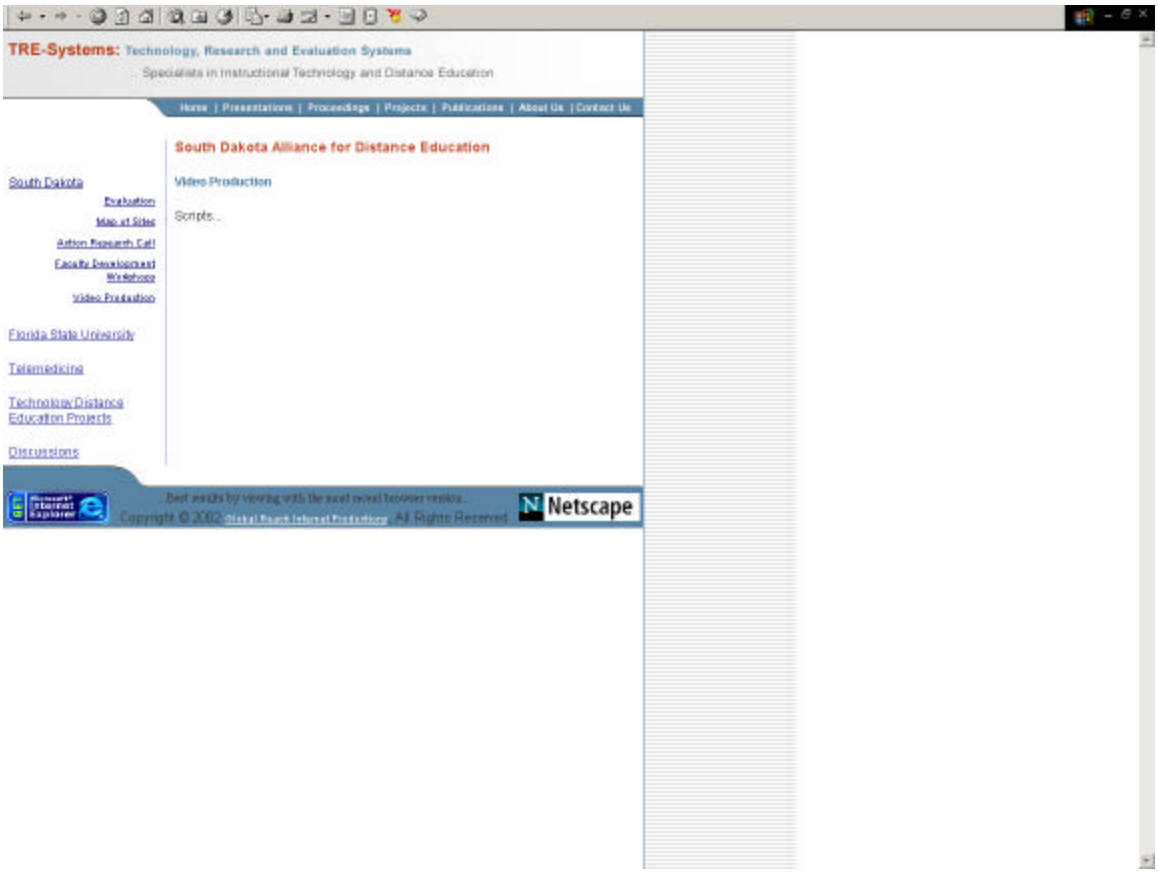
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